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ABSTRACT

Intended for preschool teachers, the monograph identifies components of an exemplary program for preschool handicapped children. The first chapter on identification reviews the steps involved in location, screening, and diagnosis. Chapter 2 considers the research literature on the role played by parents and the family in the child's intellectual and academic development and the effectiveness of parent intervention. Mainstreaming--the process of including and maintaining handicapped students in regular classrooms--is the subject of Chapter 3. The effect of teacher behavior on the child's growth is examined in Chapter 4. Chapter 5 focuses on the promotion of a healthy and realistic self concept. Ongoing assessment, the subject of Chapter 6, is defined as the systematic and objective observation and analysis of a child's skills and deficits to determine a starting point for programing and to evaluate the effectiveness of current instruction. Practical procedures for individualizing instruction are offered in Chapter 7. Suggestions for developing language programs are included in Chapter 8; and the use of paraprofessionals in the classroom is discussed in Chapter 9. In a final chapter, the component of transfer of training (generalization) is explored. (SBH)

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EARLY CHILDHOOD

Merle B. Karnes

Richard C. Lee

What Research and Experience Say to the Teacher of Exceptional Children

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THE COUNCIL FOR EXCEPTIONAL CHILDREN

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Contents

About the Authors v

Foreword vii

1 Identification: Location, Screening, and Diagnosing 1

2 Parent Involvement 13

3 Mainstreaming the Handicapped Child 25

4 Teacher Behavior 42

5 Promoting Self Concept in the Child 50

6 Ongoing Assessment Leading to Programing 59

7 Individualization of Instruction 67

8 Emphasis on Language 76

9 The Role of Paraprofessionals 86

10 Promoting Generalization of Learnings 92

Summary 107

What Research and Experience Say to the Teacher of Exceptional Children

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Foreword

The decade of the 1960's saw an amazing intensification of interest in early childhood education. The cumulative result of this increased interest and activity was a more serious view of the potential impact of early education and the commitment of vast sums of federal money to finance experimental programs for young children. Now, in the 1970's, as states begin to implement programs for young handicapped children under the federal mandate of Public Law 94-142, the question of what has been learned from this investment in early intervention programs is paramount. Specifically, early childhood educators, administrators, and program developers want to know, What constitutes a successful program for young handicapped children?

The senior author, in an earlier review (Karnes & Teska, 1975), examined research based intervention programs concentrating on children from low income families and dating back to the early 1960's. Later, Karnes and Zehrbach (1977) undertook a review of First Chance programs funded by the Bureau of Education for the Handicapped. Both of these experiences have helped the authors of this monograph to identify the dimensions of quality programing for young handicapped children that are of special interest to preschool teachers.

The studies cited or reviewed here were chosen because they illustrate concepts central to the literature about the young handicapped child or because they have immediate practical implications for the preschool teacher. Most generally, the studies were conducted in classroom settings with preschool children, both normal and handicapped. In some instances, the children were older, but the results were generalizable to the preschool situation.

In addition to a review of the literature, the authors have drawn upon their own experiences and the experiences of others in the

field to point up what appear to be relevant and practical directions in preschool programing for handicapped children. Although Karnes has identified elsewhere more than 40 components of an exemplary program (Karnes & Zehrbach, 1975), such areas as administrative leadership, physical facilities, budget, staffing patterns, and instructional materials and equipment are not included here. Instead, 10 areas of critical importance to the classroom teacher have been chosen for discussion:

1. Identification: Location, Screening, and Diagnosing.
2. Parent Involvement.
3. Mainstreaming the Handicapped Child.
4. Teacher Behavior.
5. Promoting Self Concept of the Child.
6. Ongoing Assessment Leading to Programing.
7. Individualization of Instruction.
8. Emphasis on Language.
9. Use of Paraprofessionals.
10. Promoting Generalization of Learnings.

Each area is considered in a separate chapter which includes a review of the literature specific to that area as well as a discussion of how that area may be given greater importance in programing by the classroom teacher. An extensive list of references is provided for those interested in turning directly to the research or literature in a given area.

In the lead chapter, the first step in the education of the handicapped child—identification—is presented. Identification, which consists of locating, screening, and diagnosing, is examined from a practical viewpoint. Among the questions addressed in this chapter are: (a) What does research say about the importance of early identification? (b) What practical procedures have been found to be important in the identification process? In addition, the working model used in the PEECH Project at the University of Illinois and designed to help teachers and administrators set up their own identification models is described.

Chapter 2 considers parent involvement, a necessary part of any preschool program because parents make contributions central to the maintenance and generalization of gains made by the child at school. In addition, child development specialists generally concur that parents are the first and best teachers of their child. In this chapter these questions are asked: (a) What does the research literature record concerning the role played by parents and the family in the intellectual and academic development of the child? (b) What does the research literature suggest concerning the effectiveness of parent intervention? Studies examining the relationship between certain parental child-rearing behaviors and high achieving children as well as descriptions of effective preschool parent programs are also provided.

Mainstreaming—the process of including and maintaining handicapped pupils in regular classrooms—is the subject of chapter 3. Mainstreaming has become an increasingly important feature of programs for handicapped children since its mandate in Public Law 94-142. Mainstreaming is particularly important at the preschool level, because it is most easily facilitated at that time. Questions posed in the mainstreaming chapter include: (a) How is mainstreaming defined? (b) Why has mainstreaming suddenly become such a popular educational policy? (c) What does research suggest about the efficacy of mainstreaming? (d) What does research report about the effect of teacher attitude on mainstreaming?

In chapter 4 the question of teacher behavior is examined. Teachers are the most important factor in determining the success or failure of a program, and therefore this topic merits considerable attention. Although many teacher behaviors warrant study, this chapter focuses on a select few: (a) What effect does the teacher's self concept have on the children she or he teaches? (b) What instructional behaviors on the part of the teacher seem to be associated with positive child growth? (c) What affective teacher behaviors seem to be associated with positive child growth?

The promotion of a healthy and realistic self concept is the subject of chapter 5. The relationship between a healthy self concept and child growth and the role of the parent and teacher in promoting self concept are examined through these questions: (a) What is the relationship between self concept and academic achievement? (b) What role do parents have in the development of the child's self concept? (c) What is the teacher's role in promoting the child's self concept?

Ongoing assessment, considered in chapter 6, refers to the systematic and objective observation and analysis of a child's skills and deficits to determine a starting point for programing and to evaluate the effectiveness of current instruction. Assessment provides the classroom teacher with the basic data for making instructional decisions. Because of the paucity of research on preschool assessment, information is not categorized by questions. Instead, a brief description of widely used assessment packages along with directions for practical programing are provided.

Individualized instruction, the topic of chapter 7, is one of the most important of educational components; in particular: (a) Why do educators support individualized instruction? (b) What does research suggest concerning the effectiveness of individualized instruction? In addition, practical procedures for individualizing instruction are offered.

Language development, perhaps the most important component in preschool programing as evidenced by the considerable attention it has received in the early education literature, is examined in chapter 8. The examination of this complex topic focuses on the following questions: (a) What does research suggest concerning the effectiveness of a structured approach in enhancing language development

of disadvantaged and handicapped preschoolers? (b) What are the research implications concerning teaching strategies to enhance language development? In addition, a number of suggestions derived from the senior author's extensive experience in developing language programs are provided in Directions for Practical Programing.

In chapter 9, the use of paraprofessionals in the classroom is discussed. The scarcity of research in this area enabled the authors to identify one critical question: What does the research say about the effectiveness of paraprofessionals as teachers? Some insights on paraprofessional training based on observations and experience in the field are also provided.

In the final chapter the all-important component of transfer of training (generalization) is examined. Only in recent years, in the wake of the poor maintenance effects of preschool programing, has generalization begun to receive attention in the literature. The review of the embryonic technology of generalization focuses on two questions: (a) Will generalization take place without specific programing? (b) By what techniques may generalization be enhanced?

This monograph is addressed primarily to the practitioners charged with planning and implementing preschool programs for handicapped children; therefore, teachers are the prime audience. Administrators and other staff members should, however, find the contents useful. Parents, too, may use this monograph to learn what makes a program exemplary and how they may become more involved in the education of their young handicapped children. Finally, the monograph should prove useful to teacher trainers who help prospective teachers attain the knowledge, attitudes, and skills essential to working with young handicapped children.

REFERENCES

Karnes, M. B., & Teska, J. A. Children's response to intervention programs. In J. J. Gallagher (Ed.), *The application of child development research to exceptional children*. Reston VA: The Council for Exceptional Children, 1975.

Karnes, M. B., & Zehrbach, R. R. Curriculum and methods in early childhood special education: One approach. In *Alternatives for teaching exceptional children—Essays from Focus on Exceptional Children*. Denver CO: Love Publishing, 1975.

Karnes, M. B., & Zehrbach, R. R. Alternative models for delivering services to young handicapped children. In J. B. Jordan, A. H. Hayden, M. B. Karnes, and M. M. Wood (Eds.), *Early childhood education for exceptional children: A handbook of ideas and exemplary practices*. Reston VA: The Council for Exceptional Children, 1977.

1 Identification: Location, Screening, and Diagnosing

Identification of the handicapped child is the first step in the child's education. As a comprehensive process, identification enables the educator to understand the child's specific abilities and weaknesses and points the way to programing that will keep some problems from developing and alleviate others. Only through early identification and appropriate programing can children develop their potential. For these reasons the classroom teacher must be familiar with at least the practical features of the identification process.

The total identification process can be divided into three steps: locating, screening, and diagnosing the young handicapped child (Zehrbach, 1975). Locating refers to identifying a population of children to be screened and usually involves recording each child's name, the names of the parents, and their address and telephone number. Screening refers to a rough assessment that determines whether the child is developing according to normal patterns. Screening usually involves brief, formal testing to identify those children most likely to manifest handicaps. It is important to recognize that screening is a procedure to identify children with *possible* handicaps; it is not a justification for labeling children or an information base on which individualized instructional objectives may be built. Diagnosis refers to a complete educational evaluation of a child's skills and deficits conducted by a multidisciplinary team for purposes of referring the child to an intervention program. An educational diagnosis usually involves an in-depth evaluation by a speech and motor therapist, a school psychologist, and a social worker, as well as observations by the child's parent. Another important facet of the diagnostic process is input from medical specialists. These professionals often are not part of the school staff but may be available at other institutions providing programs for young handicapped children. In this conception of the identification pro-

cess, then, a child is located, screened, and diagnosed before intervention is provided.

REVIEW OF THE LITERATURE

There is considerable agreement concerning the importance of early identification of developmental difficulties and handicapping conditions (Adelman & Feshbach, 1971; Gallagher & Bradley, 1972; Zehrbach, 1975). The basic argument in support of early identification is, of course, that it leads to treatment that can remediate a handicap, prevent development of other deleterious conditions, and minimize compounding problems such as disruptions of family relationships or inappropriate affective behaviors by the child. In recent years procedures for identifying learning disabilities (e.g., Hedrick, Prather, & Tobin, 1975), emotional problems (e.g., Rimland, 1964), early reading problems (e.g., Feshbach, Adelman, & Williamson, 1974), and general developmental handicaps (e.g., Zehrbach, 1975) have been developed. Although the validity of many of these procedures has been questioned (e.g., Gallagher & Bradley, 1972), there can be little doubt that present identification procedures are better than none at all.

The aim of this section is to review the relatively few studies that bear directly on the practical procedures for locating, screening, and identifying preschool handicapped children. A thorough description and evaluation of preschool identification instruments such as the Denver Developmental Screening Test (Frankenburg & North, 1974), the Comprehensive Development Scale (Quick, Little, & Campbell, 1974), the Comprehensive Identification Process (Zehrbach, 1975), the Developmental Screening Questionnaire (Sharp, 1974), and DIAL (Mardell & Goldenburg, 1972) are beyond the scope of this monograph; however, those interested in selecting a published identification program may well begin by examining these programs before making a final selection.

Most research studies report on identification procedures used at various sites nationally and list those factors the authors deem critical to making the identification process work smoothly.

In one such study (Jackson et al., 1973), several University of Wisconsin educators, in anticipation of the passage of mandatory legislation, conducted a community-wide screening and identification program among preschool children, ages 0 to 5, in a rural, isolated Wisconsin community. The factors deemed critical to a successful identification process included (a) establishing rapport with parents and within the community, (b) providing inservice training for personnel to conduct the screening, (c) locating reliable and valid instruments, (d) employing terms (e.g., *school readiness* or *developmental deficits*) that do not carry negative connotations when reporting findings to parents and teachers, and (e) avoiding the overgeneralization of findings.

Frankenburg (1973), one of the developers of the Denver Devel-

opmental Screening Test, reviewed the key elements of a successful screening program and drew two major conclusions: (a) Children must not be labeled as a result of the screening process; (b) screening tests should be used in the mass testing of a large population to identify children likely to manifest handicaps.

Mills (1974) described how a community can organize a volunteer force of professionals and nonprofessionals to conduct a mass screening of preschoolers. In this successful effort, 240 volunteers were used to detect hearing, vision, speech, and motor problems that might hinder a child's chances for public school success. The author reported that 99% of the 550 parents invited participated in the screening process.

Ahr (1970) delineated eight steps a school district should follow in developing a comprehensive screening program: (a) issuing a policy statement, (b) establishing district screening committees, (c) determining the scope and sequence of the screening program, (d) explaining the purposes and procedures to all staff, (e) collecting data on a systematic basis, (f) analyzing and interpreting data, (g) writing reports for subsequent administrative uses, and (h) implementing service programs based on the findings.

Zehrbach (1975) outlined a comprehensive process for identifying and diagnosing young (ages 3 to 5) handicapped children, which he refers to as CIP (Comprehensive Identification Process). In this article, Zehrbach described the screening clinic or roundup model that forms the basis of CIP. Comparing his model with the traditional agency referral approach, Zehrbach noted that CIP identified 13.7% of the screening population as requiring special services while the average percentage of agency referrals was only .9%. The author concluded that new identification procedures must be instituted if young handicapped children are to have the opportunity to enter programs that meet their needs.

The identification of gifted and talented preschoolers who happen to be handicapped has become a major focus of interest among a few preschool educators in recent years. Two programs—the Chapel Hill Carrboro City School System, Lincoln Center and RAPYHT (Retrieval and Acceleration of Promising Young Handicapped and Talented Children) at the University of Illinois—have been funded by the Bureau of Education for the Handicapped to develop methods and procedures for identifying and providing program services for gifted handicapped preschool children.

There are several factors that serve to complicate the identification of young gifted handicapped children. One factor is the general lack of consensus among professionals as to the precise meaning of giftedness and related constructs like creativity, talent, and artistic aptitude. This in turn has resulted in a lack of agreement among professionals as to the optimal means for identifying gifted, talented, and creative children. In addition, traditional methods for identifying the gifted, such as IQ tests, are often not appropriate for the gifted

handicapped child. Frequently, such tests penalize handicapped children because of their inability to comprehend a task or because a physical disability prohibits their sensorially making the correct response. IQ scores, because they are average scores, also may obscure unique ability patterns not reflected in an average score. Many times a handicap will differentially affect functioning in different developmental areas, and thus these talents are not tapped by standardized instruments.

The identification of gifted handicapped preschool children requires the use of a number of alternative means of gathering information. A broad strategy is employed to identify children in the RAPYHT project. Data from a talent checklist followed by the administration of a battery of standardized tests, along with structured observations of the child and structured interviews with parents and teachers, are used to determine eligibility of a child for a gifted/talented program. Determination of giftedness or potential talent is made by consensus of professional opinion and is based on the broad spectrum of information available. The core of the identification process used in RAPYHT is the talent checklist. This is a structured observation instrument for assessing potential in six areas: intellectual functioning, academic functioning (reading, math, and science), creativity, social leadership, artistic ability (art and music), and psychomotor functioning. Field test data are currently

A screening program is a must to identify all young handicapped children.

being collected on the talent checklist at RAPYHT distal sites throughout Illinois.

Other writers offering practical suggestions for identifying young children with handicaps include Feshbach, Adelman, and Williamson (1974); Maitland, Nadeau, and Nadeau (1974); Mardell and Goldenburg (1972); and Senf and Comrey (1975).

A LOCATION/SCREENING MODEL

Although research findings are sparse in this area, practical experience has suggested to the authors that certain basic methods for locating children are most productive. In addition, the formation of a location team is a highly effective method of identifying the target population. Finally, the choice and organization of the screening site and the selection of the screening team are critical steps in the identification process. In this section a model for conducting a location and screening process used for several years in the PEECH Project at the University of Illinois is presented.

Locating the Population to be Screened

The process for locating children varies from state to state, but four principal methods are used.

Agency Referral

The most common means of referral of exceptional children to preschool programs is through public service agencies. Unfortunately, only a small percentage of exceptional children eligible for special programs are ultimately identified by this method, and these children are usually the obviously handicapped (Down's syndrome, orthopedically handicapped, cerebral palsied, blind, or deaf). Clearly, to provide services for the mildly to moderately handicapped child for whom preschool intervention is most effective, a broader approach must be used.

Media

A second highly effective means for locating children is through media announcements of the time, place, and purpose of the screening and the name and telephone number of a contact person. This information may be disseminated by television, radio, newspapers, flyers, churches, and bulletin boards at laundromats and supermarkets. It is important to recognize that public relations is a critical aspect of the identification process; announcements should be carefully worded and publicity campaigns well organized.

School Records

Many schools ask parents to list the names of younger children in the family during the usual school registration process. A review of these records often reveals the names of 40% to 50% of the children

eligible for screening. Announcements sent home to parents of school age children can also help locate the names of friends or neighbors who have preschool children.

Community Survey

A fourth method frequently used to locate children eligible for screening is to survey the community. In addition to locating children to be screened for handicapping conditions, survey information also provides valuable data for school administrators to use in future educational planning. A survey can also help develop community interest in and support for the local school system by involving large segments of the population in a common cause.

Community surveys can be conducted in at least two ways. The most effective of the two approaches appears to be a house to house campaign conducted by the PTA or other service organization. Since a carefully organized community survey can locate up to 95% of eligible children (Zehrbach, 1975), it is the most highly recommended technique. The second approach, which may involve older citizens in the community, is a telephone campaign. In communities where 90% of the homes have telephones this approach is feasible.

Regardless of the method used to locate children, however, a record keeping process should be instituted to ensure that each child is screened and that the data are recorded for use by the school system. The record keeping system should be compatible with school records, whether maintained by computer or by hand.

Organizing the Location Team

When a method of locating children has been chosen, the identification adminstrator should select, train, and assign the staff needed to locate them. The location team should be headed by someone knowledgeable about the community who has contacts in public service agencies.

The effective location of *all* children requires the involvement of many individuals in a coordinated effort. One individual should be assigned as the team teacher, whose responsibilities include recruiting, training, and coordinating the activities of other team members. Other members of the team may include the staff of a cooperating school, paid paraprofessionals, and volunteers from the community at large or from high schools, junior colleges, and colleges.

In any plan for locating children, procedures must be developed to ensure that data are recorded completely, tactfully, and accurately. As soon as the location data are partially complete, screening may begin. In communities with distinct neighborhoods, the process can be conducted sequentially so that a location team is working in one area while a screening team works in the area just surveyed by the location team.

Selecting and Arranging the Screening Site

After choosing a location team, the screening administrator should visit potential sites and make plans to organize existing space. The following criteria for choosing a site should be considered:

1. The site must be large enough to accommodate the anticipated number of children.
2. Screening instruments have different space requirements, and sites must be appropriate for the use of specific instruments. As a general rule, minimum dimensions for a screening site are 25 feet by 50 feet.
3. If possible, a list of potential screening sites should be developed which includes the following information: address of site; name and phone number of principal or other administrator of the site; size and floor plan of the site; list of available furniture including tables, chairs, and room dividers; list of persons to contact for help in the community; and local media to contact.

After a screening site has been selected, it should be organized into four major areas:

1. *Registration area.* This area is set aside for greeting parents and children, registering, and completing name tags.
2. *Parent interview and sibling play areas.* Here parents complete the parent interview form while siblings play with toys, puzzles, and crayons and have refreshments. Children who arrive before their scheduled time may also play here while they wait for the child interviewer.
3. *Screening stations.* There should be a station for each area of special screening (motor, language, cognitive) separated from other activities to keep distractions to a minimum.
4. *Hearing and vision testing areas* or nearby rooms.

Selecting and Organizing the Screening Team

Screening requires a carefully planned, coordinated team effort. Members of a screening team must be carefully selected and should understand that the major objectives of the screening procedure are to (a) locate all eligible children, (b) assess the needs of these children and locate potential candidates for special preschool programs, and (c) establish good public relations with the parents of the handicapped child and the community at large.

Typically, a screening team will be staffed with one greeter, three to five child interviewers, a parent interviewer, two hearing and vison screeners, a speech and language clinician, and an early childhood professional, preferably one trained to work with young handicapped children. Such a staff can screen 60 children by using multiple teams if space is available.

Each screening team is headed by a *leader*, a person with organizational ability and good interpersonal skills. The major responsibil-

ities of the team leader are to make local arrangements at the screening site and to be there during screening to answer questions that arise. In advance of screening, the team leader must (a) visit potential sites and select the most appropriate location, (b) estimate the number of children to be screened and determine the size of the screening team, (c) recruit community volunteers, (d) complete publicity arrangements, (e) ensure that all necessary materials are available, and (f) make certain that team members have been trained.

The screening team should also have a *professional trained in early education for the handicapped* to assist in the screening process by answering technical questions and/or explaining the process to parents.

A person well acquainted with the screening process and well known in the community can serve as the *greeter*, whose responsibilities are to make parents feel welcome, to introduce the child to the child interviewer and the parent to the parent interviewer, and to make certain that the child is properly registered.

The *parent interviewer* helps parents complete forms and gathers from the parent any other pertinent information not included on the form (e.g., the child's current state of health). A critical responsibility of the parent interviewer is to develop rapport with parents. Further, the parent interviewer must have basic interviewing skills, be able to record information accurately, and be sensitive to interpersonal communication.

The primary responsibilities of the *child interviewer* are to (a) administer age level tasks; (b) observe and note the child's social and emotional development, hearing and vision ability, and general physical development; and (c) encourage the child's active participation. Any adult serving as a child interviewer must be able to observe and record the many different responses and characteristics of young children and, of course, must be able to relate well to young children.

Speech and expressive language screening is usually conducted by a *speech clinician* with the aid of well trained child interviewers. The role of the speech clinician is to conduct the actual screening, to train paraprofessionals, and to evaluate the data collected. Both the speech clinician and paraprofessionals should be able to (a) relate well to children, (b) elicit verbal output samples in a number of ways and record this information accurately, (c) distinguish between correct and incorrect phoneme production, and (d) identify aberrant rhythm and vocal patterns. The speech clinician must also be available for followup evaluation of children.

One *hearing and vision team* is needed for every three to five interviewers. In many states, trained hearing and vision teams, trained public health nurses, or trained speech clinicians are available through federally funded or state funded programs or through public health agencies or other organizations. If trained individuals are not available, paraprofessionals must be trained by local personnel

who meet appropriate state certification and other standards. Desirable characteristics of hearing and vision screeners include the ability to work as part of a team and to work well with young children.

Volunteers are optional, but it is helpful to have one or two volunteers who can help make parents comfortable, make coffee, give children refreshments, and play with younger brothers and sisters while the parent is completing the initial forms.

Diagnosis

After the screening, the final step in the evaluation process—diagnosis—is conducted. An educational diagnosis usually involves an in-depth evaluation by a speech and motor therapist, a school psychologist, and a social worker, as well as observations by the child's parent and by medical specialists. During the diagnostic phase of identification all the information obtained during the screening process is compiled and carefully reviewed, and a decision is made as to whether the child passed the screening, should for some reason be rescreened, or failed the screening and should be tested further. Further testing consists of administering standardized instruments such as the Stanford-Binet or the Northwestern Syntax Screening Test to determine the child's eligibility for a program. The final phase of the diagnostic process is a review and interpretation of all screening, testing, and informal information and a recommendation for educational programing.

DIRECTIONS FOR PRACTICAL PROGRAMING

The following suggestions based on practical experience will aid program developers in the effective identification of young handicapped children.

1. The cooperation of parents must be obtained. Only parents can provide certain kinds of information that are extremely valuable. To advertise that the purpose of the screening is to locate handicapped children will frighten parents and inhibit their cooperation. Instead, the explanation should convey the idea that all children are being seen in order to plan appropriate educational programs. Parents should be assured that all information is confidential and will be used in a professional manner to benefit the child.
2. The identification process must be based on the belief that early identification is critical if problems are to be prevented or minimized. This commitment must be reflected in the budget for the program.
3. The identification process must have as its goal the identification of *all children*, the severely handicapped as well as the mildly and moderately handicapped.
4. The identification process must be directed toward providing

children with instructional services rather than identification per se.

5. The identification process must assess the total development of the child including physical, social, intellectual, and emotional development.
6. Results of the identification process should be interpreted to parents and school personnel in a positive way, and any stigma associated with being handicapped should be avoided.
7. Location and screening do not need to be costly. Volunteers, parents, existing staff, and personnel from agencies who wish to provide services can serve on the screening teams. Training such persons can be accomplished in as little as an hour or two.
8. It is imperative that programs be initiated for handicapped children prior to screening or concurrent with screening. A long waiting list of applicants for the program can cause poor public relations. Thus, the screening and identification program should identify approximately the number that can be served.
9. There should be as short a time as possible between screening and the notification of the parents that a child needs a thorough diagnosis to determine more precisely the type of school placement needed. Parents must be kept informed and consulted. Long delays cause parents to become very anxious.
10. All involved in the identification process must realize its limitations; results of identification are not to be used to label a child or to establish instructional objectives.
11. To safeguard against overreferral, a second screening is a good practice. If the child fails the screening a second time, a more complete study should be undertaken.
12. The child's performance on identification measures should be carefully observed and recorded for future reference. This information should, of course, be shared with school personnel or the child's pediatrician.
13. The location, screening, and identification process is an ongoing process, and identification information should be reviewed and updated on an annual basis for all children.
14. Screening instruments should be comprehensive and at the same time quickly and easily administered. Before choosing an instrument, the staff should study available instruments and weigh the strengths and weaknesses of each. The primary considerations in choosing an instrument should, of course, be its effectiveness, but ihs cost and the ease with which it can be administered by paraprofessionals are also factors. It is frequently useful to adopt a game format to elicit the child's cooperation.
15. The identification of gifted handicapped preschool children requires the collection of a variety of information. Determination of giftedness should then be made by the consensus of the professional staff involved in the evaluation of the child and should be based upon the entire amount of available informa-

tion. No specific criterion or single score should be used to determine the gifted handicapped child. At the same time, low scores on one or several measures do not eliminate the child from consideration as gifted, especially if there are other indications of unusual ability such as a high score on another measure or the strong recommendation of a professional who has worked closely with the child.

16. Teachers and parents potentially play the most important role in the initial identification of gifted handicapped preschool children. Appropriate training provided for teachers and parents emphasizing the various ways in which giftedness, talents, and creativity can be expressed and specific ways handicapped children can display unusual abilities will be an important contribution to identifying the estimated 3% to 5% of handicapped children who are potentially talented and gifted.
17. Teachers and parents should provide the environment and activities that will develop and reinforce the unfolding of gifts and talents among young handicapped children. It is only through continuous observation concurrent with appropriate stimulation that the gifts and talents of the handicapped will be identified.

REFERENCES

Adelman, H. S., & Feshbach, S. Predicting reading failure beyond the readiness model. *Exceptional Children*, 1971, *37*, 349-354.

Ahr, E. A., & Jarvis, G. M. *Screening procedures for preschoolers and pupils in school*. Skokie IL: Priority Innovations, 1970.

Feshbach, S., Adelman, H., & Williamson, W. F. Early identification of children with high risk of reading failure. *Journal of Learning Disabilities*, 1974, *7*, 639-644.

Frankenburg, W. K. Increasing the lead time for the preschool aged handicapped child. In J. B. Jordan & R. F. Dailey (Eds.), *Not all little wagons are red—The exceptional child's early years*. Arlington Va: The Council for Exceptional Children, 1973.

Frankenburg, W. K., & North, A. F. *A guide to screening for the early and periodic screening, diagnosis, and treatment program (EPSDT) under Medicaid*. Washington DC: American Academy of Pediatrics and the Social and Rehabilitation Service, US Department of Health, Education, and Welfare, 1974. (Document No. [SRS] 74-24516)

Gallagher, J. J., & Bradley, R. H. Early identification of developmental difficulties. In I. J. Gordon (Ed.), *Early childhood education: The seventy-first yearbook of the National Society for the Study of Education*. Chicago: University of Chicago Press, 1972.

Hedrick, D., Prather, E. M., & Tobin, A. *The sequenced inventory of communication development*. Seattle: University of Washington Press, 1975.

Jackson, R., Stamps, L., Cleveland, J. C., Arthur, R., & Nelson, K. Methods and results of an every-child program for early identification of development deficits. *School Psychology*, 1973, *31*, 42-48.

Maitland, S., Nadeau, J. B., & Nadeau, C. Early school screening practices. *Journal of Learning Disabilities*, 1974, *7*, 645-649.

Mardell, C. D., & Goldenburg, D. S. *DIAL (Developmental indicators for the assessment of learning)*. Highland Park IL: DIAL, Inc., 1972.

Mills, P. L. *Administration of Illinois programs for the preschool handicapped*. Unpublished doctoral dissertation, University of Illinois, Champaign-Urbana, 1974.

Quick, A., Little, T., & Campbell, A. *Comprehensive development scale (Project Memphis)*. Belmont CA: Lear Siegler/Fearon Publishers, 1974.

Rimland, B. *Infantile autism*. New York: Appleton-Century-Crofts, 1964.

Senf, G. M., & Comrey, A. L. State initiative in learning disabilities: Illinois project SCREEN (Report 1: The SCREEN early identification procedures). *Journal of Learning Disabilities*, 1975, *8*, 451-457.

Sharp, E. Y. *Developmental screening questionnaire*. Unpublished manuscript, Department of Special Education, University of Arizona, Tucson, 1974.

Zehrbach, R. R. Determining a preschool handicapped population. *Exceptional Children*, 1975, *42*, 76-83.

2 Parent Involvement

The belief that parents should play an influential role in the education of their young child is not new. It can in fact be traced to ancient writings including Plato's *Republic* (1885, p. 20) and the *Bible* (King James version, Deuteronomy, 6:7). It is not surprising then that early programs for young children appealed for active parent involvement. Pestalozzi (1898), for instance—one of the earliest advocates of early childhood programs—recognized the vital role played by the family:

> Improving schools and methods of instruction is a worthy aim; but I can assure you, my dear friends, that I should not consider our task as half accomplished as long as our system of improvement has failed to reach the most powerful allies of our cause. This object of our ardent desire will never be accomplished except through the assistance of mothers and other family members. (p. 9)

Similarly, Frederick Frobel (Hauschmann, 1897)—one of the first program developers for young children and after whose works American kindergartens were patterned—stressed the important role of the home in educating the child:

> All are looking for a reform in education . . . . If building is to be solid we must look to the foundations—the home. The home education of rich and poor alike must be supplemented . . . . It therefore behooves the state to establish institutions for the education of children, of parents and of those who are to be parents. (p. 183)

There is no question that parent involvement is generally accepted as an important component of any preschool program. In fact, from the very beginning parent involvement was an important compo-

nent of Project Head Start, and a number of studies on parent involvement and the role of the parent in the development of children were undertaken. Chandler (1966), for example, in a comparison of families eligible for Head Start who enrolled their children in this program and eligible families who did not, found that families enrolling their children in Head Start had a greater educational level, used community resources more, and were more intact than those who did not enroll their children in Head Start. In other studies (Montez, 1966; Ortiz, 1965), it was found that parents consistently approved of the Head Start program, rating it very high in preparing children for school. Riley and Epps (1967) questioned parents whose children were in Head Start as to which parent involvement activities were of most value to them. Parents reported that opportunities to talk with the child's teacher, speak with social workers, and meet with other parents were among the most helpful.

Similarly, First Chance projects and proposals designed to develop programs for young handicapped children and to implement Public Law 91-230, Title VI, Part C, would never have been funded by the Bureau of Education for the Handicapped without specific parent involvement components. It is well documented that intervention programs for young disadvantaged children, some of whom are handicapped, produce significant gains, but it is equally recognized that parents and other family members play a significant role in promoting, reinforcing, and sustaining gains made during the preschool years. To prevent the handicapped child's regression to a lower stage of development, parent involvement is a must.

REVIEW OF THE LITERATURE

Since the 1960's, research literature on parent involvement has proliferated. This review can merely examine the highlights of that literature. More specifically, it focuses on two major questions: What does the research literature record concerning the role played by parents and the family in the intellectual and academic development of the child? What does the research literature suggest about the effectiveness of parent intervention?

The Family's Role in Child Development

During the 1950's and 1960's an impressive number of empirical investigations were conducted to establish and clarify relationships between child-rearing practices and child behavior, particularly intellectual and academic achievement (Crandall, Preston, & Rabson, 1960; Dave, 1963; Hess & Shipman, 1965, 1967; Wolf, 1964). The general research strategy was to compare the child-rearing and interaction patterns of parents whose children were high achievers or who scored well on standardized intelligence and achievement tests with those of parents whose children were low achievers or who scored low on standardized tests of intelligence and achievement.

Overall, these studies indicated that parents have a dramatic influence on the child's need to achieve academically and intellectually.

More specifically, several studies showed a consistent relationship between certain parental behaviors and the child's academic, intellectual, and verbal achievement. For example, high academic and verbal achievers tend to have parents who value intellectual achievement in children (Moss & Kagan, 1958); set high standards for their children (Rau, Mlodnosky, & Anastasiow, 1964; Rosen & D'Andrade, 1959); reward high achievement (Bing, 1963; Kagan & Freeman, 1963); provide their children with opportunites to participate in conversations and activities with adults (Bing, 1963; Milner, 1951); provide situations that give their children opportunities to enhance their vocabularies (Dave, 1963; Wolf, 1964); are aware of how their children are doing in school (Dave, 1963; Wolf, 1964); show interest in the activities of their children (Bayley & Schaefer, 1964; Rosen & D'Andrade, 1959); offer assistance with school and nonschool tasks (Bing, 1963; Dave, 1963); provide their children with books and read to them frequently (Bing, 1963; Milner, 1951); and create learning situations in the home (Dave, 1963; Wolf, 1964).

Numerous studies also examined the affective relationships between parents and their high achieving children. These studies reported that high achievers tend to have parents who demonstrate warmth toward their children (Baldwin, Kalhorn, & Breese, 1945); provide emotional support for their children (Baldwin et al., 1945); offer opportunities for positive interactions with their children (Milner, 1951); exhibit a positive acceptance of themselves (Hess & Shipman, 1965; Slaughter, 1968); and show a high regard for their child's competence (Crandall et al., 1960; Rosen & D'Andrade, 1959).

A few studies have provided even more detailed analyses of parent variables related to the intellectual and academic development of their children. Milner (1951), for example, interviewed both mothers and children to determine family variables that correlated with scores on the language section of the California Test of Mental Maturity. Results showed that high scoring children tend to have parents who read to them more often, carried on more meal time conversation with their children, and provided less frequent and less harsh physical punishment.

Wolf (1964) developed a 13 part interview scale, which he applied to 60 fifth grade children and their mothers. He found that the best predictors of intelligence and achievement were (a) parental expectation for intelligence and achievement in their children, (b) the amount of information the mother had concerning the child's intellectual development, (c) opportunities provided for enlarging the child's vocabulary, (d) the extent to which parents created situations for learning in the home, and (e) the extent of assistance provided by the parents in learning situations in school and nonschool activities.

Hess and colleagues (1971) suggested nine categories of parent behavior that positively influence child development: independence training, warmth and high emotional development, consistency of discipline, explanatory control, expectations for success, parent's sense of control, the verbalness in the home, parent's direct teaching, and parental self esteem.

Miller (1971) reviewed the research on the relationship between family variables and school performance in school districts in England. He reported the following home variables as positively related to school performance: independent thinking and freedom of discussion, values conducive to intellectual effort, support of curiosity and academic aspirations, and harmony between home and school values.

Finally, Hess (1969) summarized some of the significant findings from a short term longitudinal study that correlated data on 160 middle class and lower class mothers collected when the children were 4 years of age with the school performance 2 to 4 years later. Among the variables that were related significantly to reading readiness, reading achievement, and grades given by teachers were availability and use of home educational resources, personal optimism of the mother, and number of out-of-home activities that included both parent and child.

Effectiveness of Parent Intervention

A number of research studies and intervention programs have employed techniques to teach parents how to foster the intellectual development and academic achievement of their children (Gray, 1970; Karnes et al., 1969; Karnes, Teska, Hodgins, & Badger, 1970; Klaus & Gray, 1968), as well as how to modify a variety of problem behaviors, (Hawkins, Peterson, Schweid, & Bijou, 1966; Wahler, Winkel, Peterson, & Morrison, 1965). The accumulating evidence from this research suggests that parents can be taught skills that effectively supplement, and in some instances serve as alternatives to, preschool programs.

Many studies that train parents rely on behavior modification approaches. Typically, parents are taught by professionals to identify their child's problem behavior(s) in observable, measurable terms; to collect data on that behavior; and to implement a consistent intervention procedure. One study illustrating this approach was conducted by Wahler (1969), who trained the mothers of two highly oppositional children (i.e., children who refused to obey parental requests and frequently exhibited tantrums) to identify the target behaviors, to collect data on them, and to implement an intervention consisting primarily of praise and positive reinforcement for cooperative behaviors and "time out" for uncooperative behaviors. Using a classic reversal design, the writers were able to show an increase in cooperative behavior when the intervention was in effect and a decrease in cooperative behavior when it was not.

Similar studies also showed that parents can modify their child's problem behaviors. Wahler, Winkel, Peterson, and Morrison (1965) successfully trained parents to use social reinforcers (verbal praise and physical contact) to modify their child's isolate behavior. Hawkins and associates (1966) trained mothers as therapists in the home to modify the violent and frequent tantrum behavior of their children. Moore and Bailey (1973) reported the successful use of social punishment (verbal and affective disapproval) by a mother to decrease the frequency of autisticlike behaviors in her 3 year old daughter. A 7 month followup indicated that improvements in the child's behavior were maintained. Hall and his associates (1972) trained parents to design, implement, and report the results of home programs for their problem children without the aid of trained personnel. Wagner (1968) initiated a simple program of reinforcement procedures for parents and teachers that outlined the behaviors parents wished to occur and specified how to reinforce them when they did occur. Wagner also trained parents to identify behaviors they wished to extinguish and how to use nonreinforcement or punishment when those behaviors did occur. These procedures were implemented successfully at school by teachers and in the home by parents.

A number of intervention programs have successfully trained parents to foster the intellectual development and academic achievement of their children. Klaus and Gray (1968) used home visitors to engage parents in the education of their children to supplement activities in a preschool program. The results showed significant dif-

A parent can learn the skills necessary to become a more effective teacher of his or her handicapped child.

ferences in mental test scores between the control children and those in both the preschool and home visitor programs. Although the writers reported that differences between experimental and control groups decreased after termination of the special program, differences between the groups did persist into the first years of elementary school. The writers also reported evidence of a phenomenon they termed vertical diffusion. In effect, the younger siblings of the children in experimental families implementing the home teaching procedure showed more rapid development than did younger siblings in the control and preschool groups.

Gray (1970) contrasted a preschool program with a home based program that trained mothers to enhance the development of their children. Results showed that the home based program was equally effective and at a far lower cost, evidence which led the author to suggest that a home program that trains mothers to teach their children might serve as an effective alternative or supplement to a preschool program. In addition, Gray, like Klaus and Gray (1968), reported vertical diffusion to younger children in the home based families.

Weikart and Lambie (1969) used trained educators to teach parents how to support their child's education in conjunction with a half-day preschool program. Over a period of years the writers continued to refine the operation of the combined programs. Results reported in 1969 showed a mean gain of up to 30 points in low IQ disadvantaged children.

Gordon (1968) relied on paraprofessionals to train parents in the use of specific infant education exercises during the first year of life. Results, at 12 months of age, showed significant differences between experimental and control groups on the eye-hand, personal, social, and hearing and speech subtests of the Griffith Mental Development Scales. Nonsignificant differences were reported in locomotor and performance skills.

Levenstein (1970) used books and toys to stimulate verbal interactions between mothers and their 2 and 3 year old children. Over a 7 month period researchers visited the subjects' homes to use carefully selected materials provided by the program as well as materials found around the home to stimulate verbal interactions. Results showed a mean IQ gain of approximately 17 points (from 85 to 102) for the children.

Karnes and her associates (1969) trained economically disadvantaged mothers to stimulate the intellectual development of their infants. Mothers met weekly with a group leader and observer and were taught how to use educational materials with their infants. Half of the meeting time was devoted to discussions of personal and community problems, and mothers shared ideas and solutions and generally provided support for each other. Monthly home visits were made by the two staff members to observe the mothers working with their infants and to reinforce what had been taught at the meetings.

Significant increases in the level of intellectual functioning of the children were noted. Corresponding positive changes were found in the attitudes and self concept of the mothers and in their relationships with their children. Karnes attributed much of the positive change in the mothers to the following factors: (a) The program was strongly mother-centered with equal attention given to their problems and concerns; (b) a sense of mutual respect prevailed between staff and parents and was subsequently transferred to the parent-child relationship; (c) the infant curriculum was task oriented and developmentally based.

A final indicator of the potential impact of parent intervention is provided by Brofenbrenner (1974). In an extensive survey of intervention programs Brofenbrenner noted that the results of intervention studies tend to "wash out" when program developers fail to involve parents effectively:

> The involvement of the child's family as an active participant is critical to the success of any intervention program. Without such family involvement any effect of intervention . . . appears to erode fairly rapidly once the program ends. In contrast, the involvement of parents as partners in the enterprise provides an ongoing system which can reinforce the effects of the program while it is in operation and help to sustain them after the program ends. (p. 55)

DIRECTIONS FOR PRACTICAL PROGRAMING

The preceding review of the literature concerning the effects of parental involvement seems to warrant the following conclusions regarding parental involvement in programs for young handicapped children.

1. No program for young handicapped children can be considered exemplary unless parents are actively involved in the education of their child. It is perhaps even more critical to involve parents of handicapped children in educational programs than to involve parents of nonhandicapped children. The need for reinforcement and consistency in handling the handicapped child is critical to optimal development.
2. Flexibility and individualization of parent involvement are of the utmost importance. No two parents of handicapped children are alike. Their understanding and acceptance of the handicapped child differ, as does their readiness to involve themselves in the educational program of their children. One parent may be ready to participate in direct teaching of the child in the classroom; another, who has not yet reached this stage of development, may be willing to help prepare a program newsletter. Professionals must not force parents to fit a mold any more than they would force handicapped children into a standardized curriculum.

3. Parents must have a voice in determining their entry level into the program. Alternatives should be well defined by the professional staff, and parents should have opportunities to suggest additional ways of involving themselves in the program.
4. Parents have a right to expect professionals to provide them with training and information that will enable them to determine where their handicapped child is in the critical stages of development. Only then can parents become active participants in developing, carrying out, and assessing an individualized education program (IEP) for their child.
5. Only through an assessment of the needs of parents can the content of the parent's training program be determined. The needs of one parent or family member of a handicapped child may be quite different from those of another. One family member, for example, may need to learn how to extinguish undesirable behavior in the child, another may want to focus on monitoring the language development of the child, and a third may need help in toilet training the child. After needs have been identified, it is likely that a number of parents will be able to meet as a group to explore such topics as How to Promote the Independence of Your Handicapped Child, How Best to Read a Book to Your Child, How to Help Your Child Learn Through Play, How to Ensure that an Activity You Present to Your Child Will Be Successful.
6. Involvement of parents in the educational program of their young handicapped child can have a positive effect on nonhandicapped children in the family. If, for example, parents learn to use techniques of positive reinforcement with their handicapped child, they can then transfer these same techniques with equal effectiveness to interactions with their nonhandicapped children.
7. When family members of the handicapped child are active members of the educational team, the gains the child makes are more likely to be sustained. The complaint of teachers that handicapped children regress when they are not in school—over weekends and especially prolonged vacations—can at least in part be answered through parent involvement programs.
8. To work successfully with parents, teachers must have certain skills. Teacher reluctance to work with parents can often be attributed to lack of confidence and inexperience. The need for inservice training programs through which teachers may gain these skills and competencies is obvious. Teachers should also encourage institutions of higher learning to develop courses to train teachers to work more effectively with parents.
9. Professionals must help parents of gifted handicapped children to recognize their child's gifts or talents and their unique responsibilities to their child. Among these are (a) the important role parents play in promoting the development of their child's

gifts or talents; (b) the role parents play in promoting confidence in their child and giving the child the needed support to actively pursue the development of talents despite the handicap; (c) the need to study and learn as much about their child's unique talents as they learn about their child's disability; (d) the important role parents play in helping their child recognize his or her talent and in developing independence and responsibility to an even greater degree than expected of the handicapped individual with lesser talents; and (e) the need to become knowledgeable about community resources and educational services that will benefit their gifted or talented handicapped child.

10. Six levels of parental or family involvement have been identified by the authors, and teachers might well consider how they can develop programs that will enable parents to progress from one level to the next.

Level 1. Parents listen to an explanation of the goals of the program and permit the handicapped child to be enrolled. The parents may even observe the program and make an appointment for a parent-teacher conference initiated by school personnel. Parents are involved only so far as they are receptive to information, but there is relatively little interchange between school personnel and parents.

Level 2. Parents explore with school personnel alternatives for becoming involved in the child's educational program. The parents, with the help of professionals, choose their entry level into the parent involvement program.

Level 3. During this period, parents engage in training activities conducted by school personnel to acquire the skills and understanding needed to promote the child's growth at home. Initially, the goals for direct teaching of the child at home are set by school personnel, but parents are encouraged to participate in this task as quickly as possible. Also during this level parents may begin train ing to enable them to work as assistants to the educational team, which may include a teacher, social worker, occupational or physical therapist, psychologist, speech and language therapist, nurse, and evaluator.

Level 4. Parents are now trained paraprofessionals who serve on the educational team and are usually involved in the direct teaching of the child in the classroom. This step is an important link in extending the services of the professional team. At this stage the parents are not ready to work with other parents but are able to assist the teacher in selecting goals for the child.

Level 5. Working with other parents is the next stage of development. Here, the parents have come to a full acceptance of the fact that they have a handicapped child and are able to handle the problem objectively and positively. At this level parents

can be highly supportive of each other and serve as excellent models for parents at lower levels.

Level 6. Parents at the highest stage of involvement are directly concerned with policy making and are fully competent to interpret the program to the community.

REFERENCES

Baldwin, A. L., Kalhorn, J., & Breese, F. H. Patterns of parent behavior. *Psychological Monographs*, 1945, 58 (3, Whole No. 268).

Bayley, N., & Schaefer, E. S. Correlations of maternal and child behaviors with the development of mental abilities: Data from the Berkeley growth study. *Monographs of the Society for Research in Child Development*, 1964, 29 (3-79).

Bing, E. Effects of child rearing practices on development of differential cognitive abilities. *Child Development*, 1963, 34, 631-648.

Brofenbrenner, U. *A report on longitudinal evaluations of preschool programs.* (Vol. 2), *Is early intervention effective?* Washington DC: US Department of Health, Education, and Welfare, 1974.

Chandler, M. *Project Head Start and the culturally deprived in Rochester, New York: A study of participating and non-participating families in areas served by Project Head Start in Rochester.* Rochester NY: Rochester Area Council of Churches, Inc., 1966. (ERIC Document Reproduction Service No. ED 013 669).

Crandall, V. J., Preston, A., & Rabson, A. Maternal reactions and the development of independence and achievement behavior in young children. *Child Development*, 1960, 31, 243-251.

Dave, R. H. *The identification and measurement of educational process variables that are related to educational achievement.* Unpublished doctoral dissertation, University of Chicago, 1963.

Deuteronomy 6:7. *Bible* (King James version).

Gordon, I. J. *Early child stimulation through parent educators* (Progress report to the Children's Bureau, US Department of Health, Education, and Welfare). Gainesville FL: 1968.

Gray, S. *Home visiting programs for parents of young children.* Paper presented at the meeting of the National Association for the Education of Young Children, Boston, 1970.

Hall, R. V., Axelrod, S., Tyler, L., Grief, E., Jones, F. C., & Robertson, R. Modification of behavior problems in the home with a parent as observer and experimenter. *Journal of Applied Behavior Analysis*, 1972, 5, 53-64.

Hauschmann, A. *Ths kindergarten system.* London: S. Sonnenschein, 1897.

Hawkins, R. P., Peterson, R. F., Schwied, D., & Bijou, S. W. Behavior therapy in the home: Amelioration of problem parent-child relations with the parent in a therapeutic role. *Journal of Experimental Child Psychology*, 1966, 4, 99-107.

Hess, R. D. Parental behavior and children's school achievement: Implications for Head Start. In E. Grotberg (Ed.), *Critical issues in research to disadvantaged children.* Princeton NJ: Educational Testing Service, 1969.

Hess, R. D., Block, M., Costello, D., Knowles, R. T., & Largen, D. Parent involvement in early education. In E. H. Grotberg (Ed.), *Day care: Resource for decisions.* Washington DC: Office of Economic Opportunity, 1971.

Hess, R. D., & Shipman, V. C. Early experience and the socialization of cognitive modes in children. *Child Development*, 1965, *34*, 869-886.

Hess, R. D., & Shipman, V. C. Cognitive elements in maternal behavior. In J. P. Hill (Ed.), *Minnesota symposium on child psychology* (Vol. 1). Minneapolis: University of Minnesota Press, 1967.

Kagan, J., & Freeman, M. Relation of childhood intelligence, maternal behaviors, and social class to behavior during adolescence. *Child Development*, 1963, *34*, 899-911.

Karnes, M., et al. *Research and development program on preschool disadvantaged children: Final report* (Contract No. 5-1181, Bureau of Research, Office of Education, US Department of Health, Education, and Welfare.) Bethesda MD: ERIC Document Reproduction Service, 1969. (ED 036 663)

Karnes, M. B., Teska, J. A., Hodgins, A. S., & Badger, E. D. Educational intervention at home by mothers of disadvantaged infants. *Child Development*, 1970, *41*, 925-935.

Klaus, R. A., & Gray, S. W. The educational training program for disadvantaged children: A report after five years. *Monographs of the Society for Research in Child Development*, 1968, *33* (4).

Levenstein, P. Cognitive growth in preschoolers through verbal interaction with mothers. *American Journal of Orthopsychiatry*, 1970, *40*, 426-432.

Miller, J. O. Family involvement in British schools. *British Journal of Educational Psychology*, 1971, *14* (4), 84-97.

Milner, E. A study of the relationship between reading readiness in grade one school children and patterns of parent-child interactions. *Child Development*, 1951, *22*, 95-112.

Montez, P. *An evaluation of Operation Head Start bilingual children: Summer 1965*. Foundation for Mexican-American Studies, 1966. (ERIC Document Reproduction Service No. ED 013 667)

Moore, B. L., & Bailey, J. S. Social punishment in the modification of a preschool child's autistic-like behavior with a mother as therapist. *Journal of Applied Behavior Analysis*, 1973, *6*, 497-507.

Moss, H. A., & Kagan, J. Maternal influences on early I.Q. scores. *Psychological Reports*, 1958, *4*, 655-661.

Ortiz, A. *Project Head Start in an Indian community*. Chicago IL: Chicago University Report Number OEO-539, 1965. (ERIC Document Reproduction Service No. 103 667)

Pestalozzi, J. *Letters on early education* (addressed to J. P. Greaves, 1818). Syracuse NY: C. W. Bardeen, 1898.

Plato, *Protagoras* (selections from Jowett's translation). Oxford: Claredon Press, 1885.

Rau, L., Mlodnosky, L. B., & Anastasiow, N. *Child-rearing antecedents of achievement behaviors in second grade boys* (Cooperative Research Project No. 1838). Stanford CA: Stanford University, 1964.

Riley, C. M., & Epps, M. J. *Head Start in action*. West Nyack NY: Parker, 1967.

Rosen, B. C., & D'Andrade, S. Race, ethnicity, and the achievement syndrome. *American Sociological Review*, 1959, *24*, 47-60.

Slaughter, D. T. *Maternal antecedents of the academic achievement behavior of Negro Head Start children*. Unpublished doctoral dissertation, Committee on Human Development, University of Chicago, 1968.

Wagner, M. K. Parent therapists: An operant conditioning method. *Mental Hygiene*, 1968, *52*, 452-455.

Wahler, R. G. Oppositional children: A quest for parental reinforcement control. *Journal of Applied Behavior Analysis*, 1969, *2*, 159-239.

Wahler, R. G., Winkel, G. H. Peterson, R. F., & Morrison, D. C. Mothers as behavior therapists for their own children. *Behavior Research and Therapy*, 1965, *3*, 113-123.

Weikart, D. P., & Lambie, D. Z. *Ypsilanti-Carnegie infant education project progress report* (Department of Research and Development). Ypsilanti: Ypsilanti Public Schools, 1969.

Wolf, R. M. *The identification and measurement of environmental process variables related to intelligence*. Unpublished doctoral dissertation, University of Chicago, 1964.

3 Mainstreaming the Handicapped Child

In the past few years the practice of mainstreaming—progressively including and maintaining handicapped pupils in regular classrooms—has become widespread in preschool programs (e.g., Head Start and First Chance projects) and in public school settings at all grade levels. As of September 1978, excluding a handicapped child from the mainstream of public education is a violation of federal law (Public Law 94-142). Yet, despite its current widespread practice and the impending federal mandate, mainstreaming remains for educators an enigma; surprisingly little is known about its impact on pupils, teachers, and educational programs.

The intent of mainstreaming is to provide the handicapped child with equal opportunities for education in what has been termed the *least restrictive* educational environment. This commitment clearly represents the most progressive act in history by a society toward its handicapped citizens. It also presents educators with a variety of complicated practical problems to solve, for mainstreaming will require unprecedented changes in every component of educational programing including instructional delivery, assessment, administrative organization, teacher education, and curriculum development. Even school architecture will be involved. Ultimately these changes, as represented by greater individualization of instruction, will mean a better quality education for all children, handicapped and nonhandicapped alike. In the interim, however, as the field develops the technology and expertise to make mainstreaming a reality, change will be both slow and painful, especially for the regular classroom teacher.

A major impetus for integrating handicapped children in preschool settings was provided in 1974 with the Head Start Economic Opportunity and Community Partnership Act. This legislation required that beginning in fiscal year 1975 not less than 10% of the

total enrollment opportunities in Head Start programs in the nation be available for handicapped children. This mandate clearly represented one of the most important services rendered on behalf of preschool handicapped children, providing them with the opportunity to be in a mainstream developmental environment with nonhandicapped children. In addition, certain special services designed to assist the family of a handicapped child and to maximize the benefits that can be derived from Head Start were initiated. These included provisions for special materials, special programs and ancillary services, physical facilities, and transportation needs.

REVIEW OF THE LITERATURE

Over the past decade a broadly based and often disjointed literature on mainstreaming has developed, and a variety of topics ranging from how mainstreaming is defined to suggested training for teachers have been addressed. The authors have identified the following questions as particularly relevant to preschool teachers and have, therefore, categorized the research literature accordingly: How is mainstreaming defined? Why has mainstreaming suddenly become such a popular educational policy? What does research suggest about the efficacy of mainstreaming? What does research report about the effect of teacher attitude on mainstreaming? What does research say about the role of the teacher in enhancing social interactions?

Definitions of Mainstreaming

There is confusion in the literature regarding the definition of mainstreaming, and few precise definitions can be found. Daily (1974), for example, noted in his review a wide variety of definitions, one of which is as simple as stripping the label from handicapped children and returning them to the classroom.

Many definitions focus primarily on the temporal aspect of mainstreaming; that is, the amount of time the handicapped child spends in the regular classroom. The problem with definitions of this sort is that they ignore the comprehensive nature of the question and fail to emphasize instructional delivery, assessment, and other vital elements of programing.

Most of the more useful definitions of mainstreaming, however, recognize it to be a comprehensive process. Birch (1974), for example, incorporated 14 factors in his definition of mainstreaming:

1. Mainstreaming refers to assigning handicapped pupils to regular classes and providing special education for them.
2. In mainstreaming, regular classroom teachers broaden and adapt instructional procedures and content so all children are incorporated into regular programs at levels manageable for each child and teacher.

3. Mainsteaming may be done at any level, preschool through secondary school.
4. In mainstreaming, the handicapped pupil reports to the regular classroom teacher.
5. In conventionally organized schools or in open space schools the handicapped pupils being mainstreamed spend half or more of the day in regular classes.
6. In conventionally organized schools the special education teacher has a headquarters room to which pupils can come for periods of time from the mainstream rooms to which they are assigned.
7. In open space schools the special education teacher may be a member of the team serving in the open space setting or may have a separate room as headquarters.
8. Mainstreamed handicapped pupils leave the main group only for essential small group or individual instruction and educational assessment or to pick up and deliver assignments prepared by the special education teacher.
9. The regular class teachers and the special education teachers agree upon individual schedules and assignments for the children being mainstreamed.
10. Regular class teachers are responsible for grades and report cards for the mainstreamed handicapped pupils, but they may consult with special education teachers.
11. Special education teachers also help regular class teachers by providing educational assessments and instructional consultation for regular class pupils who may not be eligible for special education in the usual sense.
12. Mainstreaming implies the following operating principle: Handicapped pupils usually begin their education in regular kindergarten or first grade groups with special education support and are removed to special classes or schools only when the necessity to do so is shown and only for the period required to prepare them to return to regular classes.
13. Criteria for selecting handicapped pupils for mainstreaming are set in terms of matching the educational needs of children with the capability of the mainstream program to meet those needs rather than in terms of the severity of the pupil's physical, mental, emotional, or other handicap.
14. Mainstreaming has a place in the spectrum of plans for organizing instruction, space, and facilities to accommodate the educational needs of handicapped pupils.

Beery (1972), while not explicitly defining mainstreaming, suggested that any mainstream effort be critically examined for three elements: (a) that it provide a continuum of programs for children who are experiencing difficulty, (b) that it accomplish a reduction of "pull out" programs, and (c) that it call for specialists to work in the regular classrooms as much as possible.

A highly useful and often quoted definition of mainstreaming has been provided by Kaufman, Gottlieb, Agard, and Kukic (1975), who wrote:

> Mainstreaming refers to the temporal, instructional and social integration of eligible exceptional children with normal peers based on an ongoing individually determined educational planning and programming process and requires clarification of responsibility among regular and special education administrative, instructional and supportive personnel. (pp. 40-41)

As this definition suggests, mainstreaming is more than an administrative procedure or a temporal integration of handicapped children with normally functioning children. Rather, mainstreaming includes instructional and social integration, individualized educational planning, and the clarification of responsibility on the part of all professionals involved.

MacMillan, Jones, and Meyers (1976) added to Kaufman's definition the qualification that categorical labels, such as mentally retarded or emotionally disturbed, be removed from mainstreamed children.

Still another component frequently mentioned in definitions of mainstreaming, but not addressed by Kaufman, MacMillan, or Birch, is the need to provide a continuum of educational services. Many researchers (e.g., the National Advisory Council on Education and Development) assert that mainstreaming applies not merely to the integration of the handicapped child into regular classrooms but to the integration of the handicapped child into the most normal or least restrictive environment:

> In its most ideal form this integration of handicapped children into regular classrooms would be accomplished within a system based upon a continuum of educational services along the continuum. Services would range from total education within a regular classroom for the mildly handicapped, to highly specialized services outside of the public school system for the most severely handicapped. Placement of a student along the continuum should be based exclusively upon consideration of the student's educational needs. (p. 1)

As stipulated here, the terms *mainstreaming* and *least restrictive environment* become synonymous; that is, placement of the handicapped individual in the most normal or least restrictive environment is viewed as placement in the most appropriate mainstream setting.

By way of summary, then, the following points merit reemphasis:

1. Definitions of mainstreaming vary widely from simplistic definitions which merely require that the child be de-labeled and re-

turned to the regular classroom to complex definitions which suggest the comprehensive nature of the mainstreaming process.

2. Most useful definitions of mainstreaming stress the following elements:

   a. Temporal integration of handicapped children with their normal peers.
   b. Individually determined instruction.
   c. Social integration of handicapped and nonhandicapped children.
   d. Clarification of professional roles.
   e. De-labeling of the child.

Mainstreaming's Sudden Popularity

Within the last 5 years a variety of factors have worked together toward the demise of the special class and the corresponding push for mainstreaming.

A first factor has been the influence of the courts. In the last few years a number of landmark decisions have been made concerning both the right to treatment and the appropriate placement of mentally handicapped children in the public schools. Of particular importance are the *PARC* (1971) and *Mills* (1973) decisions.

In *Pennsylvania Association for Retarded Children v. Commonwealth of Pennsylvania*, the court upheld the state's obligations to provide free public programs and training for mentally handicapped children. Although only mentally handicapped citizens were covered by the *PARC* ruling, it was clearly only a matter of time before a similar decision affecting all handicapped children would be handed down by the courts. This decision came in *Mills v. Board of Education of the District of Columbia* (1973), where the court upheld the right to free and appropriate education for all handicapped children.

In addition to establishing the state's obligation to educate all handicapped children, the *PARC* and *Mills* decisions as well as the arguments in numerous other right to treatment cases strongly support the principle of educating the handicapped child in the least restrictive or most normal environment. For example, the following ruling was made in the *PARC* case with respect to the least restrictive environment:

> It is the commonwealth's obligation to place each mentally retarded child in a free public program of education and training appropriate to the child's capacity, within the context of a presumption that, among the alternative programs of education and training required by statute to be available, placement in a regular public school class is preferable to placement in a special public school class and placement in a special public school class is preferable to placement in any other type of pro-

gram of education and training. (cited in Weintraub, Abeson, Ballard, & Lavor,1976, p. 64)

The *Mills* ruling includes the following:

> That no child eligible for publicly supported education in the District of Columbia Public Schools shall be excluded from a regular public school assignment by a rule, policy or practice of the Board of Education or its agents unless the child is provided adequate alternative educational services suited to the child's needs which may include special education or tuition grants and a constitutionally adequate prior hearing and periodic review of the child's status, progress and adequacy of educational alternative. (cited in Weintraub et al., 1976, pp. 70-71)

These opinions as well as other court rulings (e.g., *Diana v. State Board of Education*, 1970; *Covarrubias v. San Diego Unified School District*, 1971; *Arreda v. Board of Education*, 1968) have influenced state legislative bodies (e.g., Tennessee in 1972 and Wisconsin in 1973) and then federal legislative bodies to enact laws (e.g., Public Law 94-142) specifying regular class placement.

A second factor influencing the current push toward mainstreaming has been the special education community. Concern by special educators regarding the most appropriate class placement for handicapped children dates back over 40 years. Gradually, the academic community has shifted its support from special class placement to integrated classrooms. Perhaps the most influential voice for integrated classrooms was Dunn (1968), who exhorted special educators to "stop being pressured into a continuing and expanding special education program that we know to be undesirable for many of the children we are dedicated to serve" (p.9). Largely as a result of Dunn's work, other educators began to voice their concerns about the inadequacies of segregated classes. The stigma of labeling and segregation was the most frequently cited criticism of self contained classes. Partially in response to Dunn's criticism, educators began to alter the focus of special education from a predominantly alternative program approach to a more general service orientation.

Other factors have also contributed to the push toward mainstreaming. Birch (1974) briefly summarized these:

1. *The capability to deliver special education anywhere has improved.* Birch asserted that instructional apparatuses have become more mobile, the number of self instructional devices has grown, and instructional approaches have been systematized from preschool through college. As a result, special education programs in recent years have begun to bring new approaches and materials to exceptional children in regular class settings with encouraging results.

2. *Parental concerns are being expressed more directly and forcefully.* Birch contended that parents of exceptional children have always been concerned about special class placement but until recently have lacked legal and moral backing. With the change in law and the provision of due process, parents will undoubtedly place more pressure on public schools to mainstream whenever possible.
3. *Rejection of labeling children is growing.* Birch contended that if a child is called retarded, disturbed, slow, or handicapped, the label will influence the way the child is treated by people and the child's self perception.
4. *Court actions have accelerated changes in special education procedures.*
5. *The fairness and accuracy of psychological testing have been questioned.* The validity of intelligence and achievement tests, especially as they affect minority group members, has been challenged in the courts.
6. *Too many children were classified psychometrically as mentally retarded.* Many educators in large schools had begun to notice that far too many minority students were being placed in special classes.
7. *Civil rights actions against segregation uncovered questionable special education placement practices.* Birch reported that many school districts have been challenged for allegedly violating the civil rights of children by placing them in segregated special classes in separate school facilities. Segregation could then be charged, for example, if special education classes contained significantly greater proportions of American Oriental, Black, Mexican American, or Indian children than the rest of the population. Faced with the necessity of readjusting special education classes to balance minority enrollments, many districts reassigned exceptional children into regular classes on the basis of parental requests. In some cases, former special class children not only performed satisfactorily, but a few blossomed academically in integrated classrooms. Additionally, some school districts deliberately chose to move toward greater integration of exceptional children for some or all of their education.
8. *The effectiveness of conventional special education was questioned.* Ths actual educational effectiveness of student performance in separate special schools and classes has been questioned. Comparative research rarely indicated clear-cut academic or social benefits for handicapped children remaining in regular classes who received no special help. Problems in interpreting the results of these studies are acknowledged because of the way such comparative investigations have been conducted. Nevertheless, many educators interpret the studies to their own advantage.
9. *Financial considerations foster mainstreaming.* In recent years some states have made it economically feasible or favorable to

integrate, a trend that represents a break from the past when segregated classrooms were rewarded financially.

Efficacy of Mainstreaming

During the past 40 years over 20 studies employing a variety of research designs, instruments, and samples have reported findings concerning the efficacy of special class placement for educable mentally handicapped children. Most efforts contrasted retarded children enrolled in regular classes with matched subjects in special classes within the same school system on academic performance (e.g., Blatt, 1958; Mullen & Itkin, 1961) and social and emotional adjustment (e.g., Ainsworth, 1959; Jordan, 1960; Kern & Pfaeffle, 1963; Meyerowitz, 1962, 1967). Findings were equivocal, with some studies reporting no significant differences between regular and special class groups in achievement (e.g., Blatt, 1958) and social adjustment (e.g., Lapp, 1957), and others reporting differences favoring the regular class sample (e.g., Cassidy & Stanton, 1959) or the special class sample (e.g., Elenbogen, 1957). In addition, many reviewers criticized the efficacy studies for a number of methodological weaknesses including sampling bias (Quay, 1963), failure to select and assign children randomly to special and regular classes (Spark & Blackman, 1965), lack of adequate and reliable instruments of evaluation and measurement (Goldstein, Moss, & Jordan, 1962), and procedures for matching subjects.

Thus, evidence from studies on the efficacy of special classes is inconclusive and riddled with methodological weaknesses. As Blackman (1965) observed:

> In view of the inconclusiveness of the research, the critical issue of whether we should continue to schedule special classes, with the accompanying increased costs as a result of reduced class sizes, special equipment and materials, special salary increments and the additional training required of teachers remains insoluble. (p. 35)

It is important to note, then, that efficacy studies themselves provide no clear empirical mandate for mainstreaming. The results of those studies do not show mainstreaming to be a more effective policy than segregated classroom placement. At best, according to the proponents of mainstreaming, efficacy studies suggest that the handicapped child is no worse off in the regular class than in the special class and that some long term social benefits may be realized through regular class placement.

Although most of the research over the past 20 years related to mainstreaming has involved secondary and elementary students, a small body of somewhat disjointed but nevertheless intriguing literature on mainstreaming preschool children has recently emerged. A limited portion of that literature consists of empirical investiga-

tions, with a single study comparing the effectiveness of individualizing instruction in a special versus an integrated kindergarten (Spollen & Ballif, 1971) and a few behavior analysis studies aimed primarily at increasing the frequency of appropriate social interactions between isolated (Buell, Stoddard, Harris, & Baer, 1968) and aggressive (Strain, Shores, & Kerr, 1976; Strain & Timm,1974) preschoolers and their nonhandicapped peers.

The bulk of the preschool mainstreaming literature is devoted to descriptions of the policies and practices of programs that integrate handicapped preschoolers with their nonhandicapped peers. Integrated programs have been reported involving preschoolers who are deaf and hard of hearing (Northcott, 1971, 1973; Pollack & Ernest, 1973), visually disabled and blind (Burke, 1970; Tait, 1974), emotionally disturbed (Beeler, 1973), and mentally handicapped and language disabled (Karnes, Zehrbach, & Teska, 1972). Although each program describes specific procedures for integrating children with specific educational disabilities, some across-program support for a number of general programing components has begun to surface, including emphasis on (a) structured curricula, (b) individualized instruction, (c) teacher ability and attitude as the most important factors in the success of an integrated program, and (d) parent involvement.

Effect of Teacher Attitude

A number of writers have highlighted the critical role played by the teacher in successfully engineering an integrated classroom. Johnson (1962), for instance, argued that the teacher is the indispensable factor in the success of both regular and integrated classrooms. Given the perceived importance of the teacher in making mainstreaming work, particular attention has been paid to teacher attitudes. Three major types of research have been initiated.

The first investigates whether teacher attitudes toward integrated classrooms are related to experience or number of years spent teaching. The few studies (Jacobs, 1969; Jordan & Proctor, 1969) investigating this relationship have found experience to be a significant variable; younger, less experienced teachers are more favorably disposed to mainstreaming than their older, more experienced counterparts.

The second type of research examines whether teacher attitudes vary according to the type of disability or handicapping condition. Typically, these studies (Panda & Bartel, 1972; Shotel et al., 1972) employ a measure of attitude such as Osgood and Tanenbaum's Semantic Differential Technique. Teachers are asked to assess their feelings toward a simulated description of a handicapped child. Results indicate that teacher attitudes do indeed vary according to the type of disability or handicapping condition. Typically, physical disabilities arouse fewer negative feelings than do cognitive deficiencies, emotional problems, or children exhibiting seizures.

The third type of research investigates whether inservice teacher training alters the teacher's acceptance of or willingness to deal with integrated classrooms. This inservice training generally involves providing teachers with information on the nature of handicapping conditions and on strategies for dealing with educational problems stemming from such disabilities. Studies examining this question report mixed results with some finding significant positive changes in attitude (e.g., Jordan & Proctor, 1969) and others reporting no significant change in attitude following inservice training (e.g., Panda & Bartel, 1972).

A final finding from many of the attitude studies concerns the regular classroom teacher's need for ancillary services. A number of writers (e.g., Barngrover, 1971) report that regular classroom teachers expressed the need for supportive and resource services when dealing with handicapped children and expressed a greater confidence in their ability to handle integration when given the help of such personnel.

The Teacher's Role in Enhancing Social Interaction

A primary goal of integrated preschool programs is to facilitate social interaction between handicapped and nonhandicapped children. Programing to achieve social interaction of handicapped children represents a logical first step toward generating a wide range of desirable educational outcomes. It is commonly believed, for example, that the social learning of children is facilitated by positive social contacts with peers (Hartup, 1970). Additionally, when handicapped children are accepted by and interact with their nonhandicapped classmates, more structured forms of teaching between children can be organized. Such interactions should be beneficial to nonhandicapped children as well, by providing them with opportunities to develop sensitive feelings of acceptance of individual differences. In sum, it seems appropriate to structure events in classrooms to maximally integrate handicapped and nonhandicapped children.

Research on two practical procedures for enhancing social interaction have been conducted: the use of teacher reinforcement and the use of classroom materials.

Teacher Reinforcement

Teacher praise delivered contingent on positive interactive behavior between children has been proven in a number of cases to be an effective tactic to increase the social integration of preschool children (Hart et al., 1968; Strain & Timm, 1974). In a study by Strain and Timm, for example, teacher praise was delivered to a behaviorally isolated preschool child and her classroom peers under two conditions: (a) verbal praise and physical contact directed to the isolate girl for interactions with her peers and (b) verbal praise and physical

contact directed to the isolate child's peers for engaging in appropriate interactions with the isolate child. Under both conditions, teacher praise was extremely effective in increasing positive social interactions.

There is other research evidence, however, that indicates that teachers should be selective in providing reinforcement. Specifically, teachers should be sensitive to the social interaction occurring naturally between children; they should be careful to facilitate children's ongoing positive social interaction without interrupting it (Strain & Wiegerwik, 1976). One way this can be facilitated is through dramatic play. Shores, Huster, and Strain (1976), for example, found that dramatic play or role playing activities were more successful in producing social interaction between preschool children than were arrangements that relied heavily on continued adult involvement. Thus, some preliminary research evidence suggests that teachers should be no more obtrusive and obvious than necessary in structuring positive interactions between handicapped and nonhandicapped children. In addition, reduced teacher involvement will be much more likely to produce maintenance and generalization of responding. Children generalize learning better when there is less dependence on the teacher's direct influence. This concept will be explained further in chapter 10.

Use of Classroom Materials

A number of studies suggest that the kinds of materials provided to children will influence the nature and duration of their social interactions. Studies show, for example, that the type and amount of available play materials are important determinants of children's social play levels in both integrated (Quillitch & Risley, 1973) and nonintegrated settings (Johnson, 1935).

A good example of a study demonstrating the effects of materials on children's play behavior is provided by Quillitch and Risley (1973). They found that children who attended an integrated community recreation center would play alone or together depending on the toys that were available in the center. Systematic variations of the presence and absence of six "social" toys and six "isolate" toys revealed that the children played with one another 78% of the time when social toys such as checkers or playing cards were present, but only 16% of the time when isolate toys such as puzzles, Tinkertoys, or Playdoh were present.

The role of materials and other items in the classroom, such as the arrangement of furniture, in enhancing social integration of handicapped and nonhandicapped children is an exciting and most probably fruitful direction for future research.

DIRECTIONS FOR PRACTICAL PROGRAMING

The current literature on mainstreaming cannot be said to offer even

an incomplete guide to preschool teachers on establishing and implementing a mainstream program; still, it does offer some hints. In addition, the experience of the authors, in particular the work of the senior author over the last 7 years in establishing an integrated program for preschoolers, offers some indications of how to design and implement integrated programs.

1. The research on teacher attitudes toward mainstreaming supports the idea that ancillary personnel are critical to establishing a positive attitude among teachers of older handicapped children. It is not unreasonable to assume that the same is true for teachers of handicapped preschoolers. Prior to integrating handicapped children into a preschool program, then, the program must be well staffed with support personnel trained to provide services to handicapped children.
2. Many preschool teachers have had little or no experience with handicapped children and may hold attitudes that interfere with good teaching practice. It is recommended that inservice training programs be provided to foster the following attitudes in teachers of normal preschool children about to receive handicapped children into their classroom:
   a. The teacher must realize that the handicapped child has the same basic needs as other children, including the need to be accepted by teacher and peers, to succeed at assigned tasks, and to develop as much independence as the handicap will allow.
   b. The teacher must recognize that handicapping conditions are complex and affect the whole child.
   c. The teacher must understand that handicapped children, even those with the same disability, differ and must be programed for individually if mainstreaming is to be effective. Like their nonhandicapped peers, handicapped children are entitled to develop to their full potential.
   d. The teacher must acknowledge a responsibility to all children in the classroom and avoid providing undue attention to one child to the neglect of another.
   e. The teacher should, while encouraging the handicapped child to try new things, realize that a handicap is indeed a handicap and does place limitations on the child. At the same time, the teacher should recognize that expecting too little of the handicapped child inhibits progress.
3. The regular preschool teacher should provide for professional growth through reading, workshops, and courses. The more teachers know about handicapping conditions, the better able they will be to use the services of ancillary personnel to promote the development of the handicapped child through more precise individualization of instruction.
4. The regular preschool teacher should acquire knowledge about

the specific resources available at the federal, state, and local levels to aid in programing for the handicapped child.

5. In order to mainstream handicapped and nonhandicapped children successfully, the teacher must view herself or himself as an active change agent responsible not only for programing for each individual but also for designing an environment that enhances and promotes social interactions between handicapped and nonhandicapped peers.
6. Powerful incentives are needed to motivate some handicapped children. It is therefore important that the teacher consult all personnel who have worked with the child, including parents, older siblings, relatives, and professional personnel, to establish a list of potential positive reinforcers for that child.
7. The teacher must be a sensitive observer of the handicapped child, attempting to assess how the handicapped child views adults (e.g., as supportive or threatening) as well as peers. Knowledge of the home environment can often be used to explain or alter the child's behavior in class. In short, the teacher of young handicapped children must use every possible source of information to deepen understanding of each child.
8. Mainstreaming is an individual matter. One child may be able to be integrated with nonhandicapped children for the entire day, while another may need more individualized attention and can be integrated for a period of only 30 minutes. Here again, the professional team should determine the mainstream boundaries, for unsuccessful integration can be as damaging to the self concepts of the handicapped child as segregation.
9. Evaluation of the effectiveness of mainstreaming for a specific child should be an ongoing process involving all members of the team.
10. The success of mainstreaming is dependent on how closely the regular and special staff work together in adapting instructional materials and activities for the handicapped child. Often, adaptations made for the handicapped child enhance the learning of the nonhandicapped children.
11. A successful mainstreaming program is built on effective working relationships among members of the multidisciplinary team responsible for identification and programing. One way school systems can enhance this relationship is to define explicitly the role of each member of the team. At the same time, however, these roles should not be so rigidly defined as to discourage flexibility and innovation.
12. It is critical for the classroom teacher to be thoroughly knowledgeable about services provided the handicapped child by ancillary personnel: what these services are, why they are being provided, and how they are being delivered. Although it is desirable for every member of the multidisciplinary team to share this information, it is not always possible, given large case loads

and limited time. Therefore, the teacher must serve as the information center and be prepared to answer the questions of parents and professionals concerning the range of services provided the handicapped child.

13. Teachers working in mainstreamed classrooms must be convinced of the value of parent involvement. Among the assumptions that serve as the basis for parent involvement are (a) that parents always serve as teachers for the young child, whether educators grant them that title or not; (b) that parents want to become more effectively involved in their child's development and are willing to engage in activities to improve their parenting skills; (c) that parents should have input into the educational placement and objectives for their child; (d) that parents are individuals and must be approached as individuals; (e) that parents can effectively participate in the classroom; (f) that parents can work effectively with and learn from other parents; (g) that parents can be powerful public relations agents for describing and interpreting educational programs to others. They can also be potent advocates of support to school boards and state legislatures.
14. Professional accommodations will be required to ensure the success of mainstreaming. The Bureau of Education for the Handicapped, for example, should synthesize and disseminate to teachers existing research information on the implications of handicapping conditions for educational planning. Similarly, the field of early education needs to develop training strategies for preschool teachers that will prepare them to work effectively in mainstreamed classrooms. Researchers and educators must recognize that the gifted child is also an exceptional child and must be mainstreamed with normal and handicapped peers. The field has only begun to investigate the special problems associated with integrating the gifted child.
15. An area of future investigation in preschool mainstreaming should be the unique problems associated with the integration of handicapped children with unusual gifts and talents with their handicapped and nonhandicapped peers.

REFERENCES

Ainsworth, S. H. *An exploratory study of education of mentally retarded children in Georgia public schools.* Athens: Thereisa Press, University of Georgia, 1959.

Arreola v. Board of Education. Case No. 160-577, Superior Court, Orange County, Calif., 1968.

Barngrover, E. A study of educators' references in special education programs. *Exceptional Children,* 1971, *37,* 754-755.

Beeler, A. Integrating exceptional children in preschool classrooms. *B.A.E.Y.C. Reports,* 1973, *15* (2), 33-41.

Beery, K. E. *Models for mainstreaming.* San Raphael CA: Dimensions, 1972.

Birch, J. W. *Mainstreaming: Educable mentally retarded children in regular classes*. Reston VA: The Council for Exceptional Children, 1974.

Blackman, L. S., & Goldberg, I.I. The special class—parasitic, endophytic or symbiotic cell in the body pedagogic. *Mental Retardation*, 1965, *3*, 30-31.

Blatt, B. The physical, personality, and academic status of children who are mentally retarded attending special classes as compared with children who are mentally retarded attending regular classes. *American Journal of Mental Deficiency*, 1958, *62*, 810-818.

Buell, J., Stoddard, P., Harris, F., & Baer, D. M. Collateral social development accompanying reinforcement of outdoor play in a preschool child. *Journal of Applied Behavior Analysis*, 1968, *1*, 167-173.

Burke, J. Children with visual disabilities. In R. Reger (Ed.), *Preschool programming of children with disabilities*. Springfield IL: Charles C Thomas, 1970.

Cassidy, V. M., & Stanton, J. E. *An investigation of factors involved in the educational placement of mentally retarded children*. Columbus OH: Ohio State University Press, 1959.

Covarrubias v. San Diego Unified School District. Civil Action No. 70-30d (S.D. Cal. 1971).

Dailey, R. Dimensions and issues in "74": Tapping into the special education grapevine. *Exceptional Children*, 1974, *40*, 503-507.

Diana v. State Board of Education. Civil Action No. C-70 37 R.F.P. (N.D. Cal., 1970).

Dunn, L. M. Special education for the mildly retarded. Is much of it justifiable? *Exceptional Children*, 1968, *35*, 5-22.

Elenbogen, M. L. A comparative study of some aspects of academic and social adjustment of two groups of mentally retarded children in special classes and in regular grades. *Dissertation Abstracts*, 1957, *17*, 2496.

Goldstein, H., Moss, J. W., & Jordan, L. *Early school development of low I.Q. children: A study of special class placement* (Interim report July 1959 to June 1961). Champaign: University of Illinois Press, 1962.

Hart, B. M., Reynolds, W. J., Baer, D. M., Brawley, E. R., & Harris, F. R. Effect of contingent and noncontingent social reinforcement on the cooperative play of a preschool child. *Journal of Applied Behavior Analysis*, 1968, *1*, 73-76.

Hartup, W. W. Peer interaction and social organization. In P. H. Mussen (Ed.), *Manual of child psychology* (3rd ed.). New York: Wiley, 1970.

Jacobs, J. *The search for help: A study of the retarded child in the community*. New York: Bruner/Mazel, 1969.

Johnson, G. O. A study of the social position of mentally handicapped children in the regular grades. *American Journal of Mental Deficiency*, 1950, *55*, 60-89.

Johnson, G. O. Special education for the mentally handicapped—A paradox. *Exceptional Children*, 1962, *29* (2), 62-69.

Johnson, M. W. The effect on behavior of variation in amount of play equipment. *Child Development*, 1935, *6*, 56-68.

Jordan, J. B. Intelligence as a factor in social position—A sociometric study in special classes for the mentally handicapped. *Dissertation Abstracts*, 1960, *21*, 2987-2988.

Jordan, J. E., & Proctor, D. I. Relationships between knowledge of exceptional children, kind and amount of experience with them, and teacher attitudes toward their classroom integration. *The Journal of Special Education*, 1969, *3*, 433-441.

Karnes, M. B., Zehrbach, R. R., & Teska, J. A. *A five-year longitudinal comparison of a traditional versus structured preschool program on cognitive, social, and affective variables.* Paper presented at the 1972 AERA Convention, Chicago, April 1972.

Kaufman, M., Gottlieb, J., Agard, J., & Kukic, M. Mainstreaming: Toward an explication of the construct. In E. L. Meyer, G. A. Vergason, & R. J. Whelan (Eds.), *Alternatives for teaching exceptional children.* Denver: Love, 1975.

Kern, W. H., & Pfaeffle, H. A. A comparison of social adjustment of mentally retarded children in various educational settings. *American Journal of Mental Deficiency*, 1963, *67*, 407-413.

Lapp, E. R. A study of the social adjustment of slow-learning children who were assigned part-time to regular classes. *American Journal of Mental Deficiency*, 1957, *62*, 254-262.

MacMillan, D. L., Jones, R. L., & Meyers, C. E. Mainstreaming the mildly retarded: Some questions, cautions and guidelines. *Mental Retardation*, 1976, *14*, 3-10.

Meyerowitz, J. H. Self-derogations in young retardates and special class placement. *Child Development*, 1962, *33*, 443-451.

Meyerowitz, J. H. Peer groups and special classes. *Mental Retardation*, 1967, *5*, 23-26.

Mills v. Board of Education of the District of Columbia. Civil Action No. 1939-71 (D.D.C., 1971).

Mullen, F. A., & Itkin, W. *Achievement and adjustment of educable mentally handicapped children in special classes and in regular classes.* Chicago: Chicago Board of Education, 1961.

Northcott, W. H. The integration of young deaf children into ordinary educational programs. *Exceptional Children*, 1971, *38*, 29-32.

Northcott, W. H. Implementing programs for young hearing-impaired children. *Exceptional Children*, 1973, *39*, 455-463.

Panda, R. C., & Bartel, N. R. Teacher perception of exceptional children. *Journal of Special Education*, 1972, *6*, 261-266.

Pennsylvania Association for Retarded Children (PARC) v. Commonwealth of Pennsylvania. Civil Action No. 71-42 (E.D. Pa., 1971).

Pollack, D., & Ernest, M. Learning to listen in an integrated preschool. *Volta Review*, 1973, *75*, 359-367.

Public Law 94-142, *Education for All Handicapped Children Act*, November 29, 1975.

Quay, L. C. Academic skills. In N. R. Ellis (Ed.), *Handbook of mental deficiency*. New York: McGraw-Hill, 1963.

Quilitch, H. R. and Risley, T. R. The effects of play materials on social play. *Journal of Applied Behavior Analysis*, 1973, *6*, 573-578.

Shores, R. E., Hester, D., & Strain, P. S. Effects of teacher presence and structured play on child-child interaction among handicapped preschool children. *Psychology in the Schools*. 1976, *13*, 171-175.

Shotel, J. R., Iano, R. P., & McGettigan, J. F. Teacher attitudes associated with the integration of handicapped children. *Exceptional Children*, 1972, *38* (9), 677-683.

Sparks, H. L., & Blackman, L. S. What is special about special education revisited: The mentally retarded. *Exceptional Children*, 1965, *31*, 242-247.

Spollen, J., & Ballif, B. L. Effectiveness of individualized instruction for kin-

dergarten children with developmental lag. *Exceptional Children*, 1971, 38, 205-209.

Strain, P. S., Shores, R. F., & Kerr, M. M. An experimental analysis of spillover effects on the social interaction of behaviorally handicapped preschool children. *Journal of Applied Behavior Analysis*, 1976, 9, 3140.

Strain, P. S., & Timm, M. A. An experimental analysis of social interaction between a behaviorally disordered preschool child and her classroom peers. *Journal of Applied Behavior Analysis*, 1974, 7.

Strain, P. S., & Wiegernik, R. The effects of sociodramatic activities on social interaction among behaviorally disordered preschool children. *Journal of Special Education*, 1976, 10, 71-73.

Tait, P. E. Believing without seeing: Teaching the blind child in a regular kindergarten. *Childhood Education*, 1974, 50, 285-291.

Weintraub, F., Abeson, A., Ballard, J., and Lavor, M. L. *Public policy and the education of exceptional children*. Reston VA: The Council for Exceptional Children, 1976.

4 Teacher Behavior

Most early childhood educators and writers, regardless of philosophy, agree that the success or failure of a preschool program is ultimately determined by the teacher. Swift (1964), after an exhaustive review of the literature on the effects of early experience on young children, frankly concluded that "the most important single factor in determining the nature of the experience for the child is the teacher" (p. 280). In view of this consensus, it is not surprising that much has been written about the role of the teacher, not only in terms of professional skills and competencies but in terms of personality and attitudes as well.

REVIEW OF THE LITERATURE

In the past two decades a very large and diverse literature has emerged which examines the preschool teacher's self concept (e.g., Jersild, 1965), teaching methods (e.g., Beller, 1955), instructional behavior (e.g., Beller, 1967, 1969), and affective behaviors (e.g., Larsen, 1975). In order to make this extensive body of research more readily accessible to the classroom teacher, it has been arranged according to the following three questions: What effect does the teacher's self concept have on the children she or he teaches? What instructional behaviors on the part of the teacher seem to be associated with positive child growth? What affective teacher behaviors seem to be associated with positive child growth?

Effect of the Teacher's Self Concept

Research has customarily focused on the relationship between the child's self concept and various aspects of development, but some writers have directed their attention toward the effects of the teacher's self concept on the child's development. Jersild (1965)

and Coopersmith (1967), for example, maintained that teachers must have a positive view of themselves if they are to help establish positive self views among their pupils.

Jersild (1965) asserted that the personal problems of teachers frequently interfere with their performance in class and can influence the attitudes of their pupils. A similar view was expressed by Combs and associates (1969), who found that effective priests, counselors, and teachers are distinguished by their positive attitudes toward themselves and others. Combs (1965) also suggested that efforts to foster positive self concepts among fledgling teachers should be an important component of teacher training programs. Indeed, Combs went on to assert that the attitude of teachers toward themselves and others is as important as the teaching procedures they use in enhancing the self concept of their pupils. Teachers with positive attitudes promote a positive classroom atmosphere, while teachers with negative attitudes promote negative feelings among the pupils. If teachers believe that pupils can and will achieve, Combs argued, then children tend to be more successful.

As these studies illustrate, teachers need to view themselves as respected and liked by others. When teachers have essentially favor-

Teachers must view themselves positively to promote a healthy self concept among their charges.

able attitudes toward themselves, they are in a much better position to build positive and realistic self concepts among their pupils.

Instructional Behaviors Associated with Positive Child Growth

In past years research and development in preschool teaching have been strongly influenced by the idea that certain instructional behaviors may be related to the social, academic, and intellectual growth of young children. Numerous studies (e.g., Karnes et al., 1969; Katz, 1968; Soar, 1966) have found at least some degree of positive relationship between specific teacher behaviors and social, academic, and intellectual growth in children.

One study investigating the link between the instructional behavior of the teacher and intellectual growth among preschool children was conducted by Beller (1969), who assessed the ability to learn a problem solving task of 122 Head Start children from classrooms where teachers used a variety of teaching styles and techniques. Beller found that children who learned the task best tended to come from classrooms where teachers used more diversified teaching techniques (e.g., teaching tasks in different ways), a more flexible curriculum (e.g., the use of a variety of activities and materials to teach concepts), and flexible arrangements of classroom space.

Fortune (1967) examined the teaching behavior of 30 Head Start teachers who taught special 3 minute to 5 minute lessons on social science concepts such as community workers, ships, and trains. The instructional behaviors of the Head Start teachers were studied using videotapes. The most effective teachers—as judged by their pupils' test scores—exhibited the following behaviors more frequently: (a) allowing children to explore and manipulate objects, (b) introducing and leading student verbal practice, and (c) praising and repeating correct answers.

A number of investigators have found specific patterns of questioning to be effective in increasing children's academic and intellectual growth. In one study with fourth graders, Thompson and Bowers (1968) found that teachers using an equal mixture of convergent and divergent questions were most successful in enhancing academic, intellectual, and creative development. In another study, Soar (1966) found that a higher ratio of teacher inquiry was more effective than drill activity in increasing the academic and intellectual gains of Head Start preschoolers. Rosenshine (1971), after an extensive cross age review of the literature on teaching behaviors associated with pupil achievement, concluded that the most successful interaction strategy between children and teachers involves a moderate amount of initial structuring by the teacher to evoke responses from the students followed by the reinforcement of their cognitive reaction; finally, children should be encouraged to elaborate their reactions.

Still another valuable source of research on specific teaching behaviors that lead to positive growth in preschool children are the

comparative preschool intervention programs established in the mid 1960's (DiLorenzo, Salter, & Brady, 1969; Karnes et al., 1969; Klaus & Gray, 1968; Weikart, 1969). One example of a research based program that took into account the importance of teacher behavior is that of Karnes and her associates (1969). In this program, the curriculum was designed to develop basic language skills and teach specific content in the areas of mathematics, language arts, social studies, and science. Judging from the significant gains made by students on standardized tests of intellectual, language, and academic achievement, it would appear that the following behaviors exhibited by teachers in the Karnes program were effective: (a) structured instruction that emphasizes verbalizations in conjunction with the manipulation of concrete materials; (b) the generalization of concepts taught in structured periods to other times such as directed play; (c) active correction, modification, or expansion of a child's verbalizations; (d) specific and frequent positive feedback to the child; and (e) the adoption of a game format encouraging the child's verbal responses in sorting, matching, and classification problems.

A few writers have examined the relationship between types of teacher feedback and positive child growth. A study by Wallen (1966), for instance, investigated the relationship between specific forms of teacher praise and academic achievement in preschoolers. Brief verbal expressions such as "aha" and "right" related most strongly to improved cognitive performance. The author hypothesized that such brief expressions have more distinctive cuing values than nonverbal forms of praise and tend to interfere less with the child's ongoing activities than elaborate forms of verbal praise. Other studies on feedback, however (Fortune, 1967; Morrison, 1966; Perkins, 1965; Soar, 1966), found that certain forms of elaborated verbal feedback were effective in increasing children's academic achievement. This verbal feedback consisted of carefully restating or analyzing the response of the child and explaining what was good about it.

Other studies that have attempted to relate specific instructional behavior to positive child growth have been conducted by Beller (1967) and McClure (1936). In general, the findings of these studies indicate that techniques that take into account the child's interests and cognitive style and teachers who provide specific, clear and positive instructions are most effective in promoting learning. According to Swift (1964), teachers must be child centered in their approach they must be aware of the child's needs and willing to adapt to them while at the same time pursuing their own goals for the child.

Affective Teacher Behaviors Associated with Positive Child Growth

Numerous studies have examined the affective behaviors of teachers who successfully enhance social, academic, and intellectual development in children. In a series of three studies, Fagot (1973) ob-

served that teachers who were more successful in promoting on-task behavior in preschool children tended to criticize less, praise more, and develop a warm and supportive relationship with their students.

Larsen (1975) developed a program to increase the frequency of "supportive" behaviors—statements of affection, praise, exclamations of approval, reassuring facial expressions, embracing, physical closeness to the child—by teachers when providing instruction in motor and cognitive tasks. Increased teacher support was beneficial in teaching motor tasks but not significantly beneficial in teaching cognitive tasks. The authors theorized that supportive behaviors, as defined in this study, may have interfered with the child's concentration on the cognitive task.

In the Beller (1969) study described earlier, a significant positive relationship was noted between the affective behavior of teachers and successful problem solving of students. Beller found that these teachers exhibited greater closeness to the child and greater respect for the child's family; in addition, these teachers were sensitive to the child's rights, encouraged children to explore materials in active ways, and reinforced more and criticized less. Teachers of successful pupils also displayed significantly more positive feeling toward their work. Similar results were reported in the Karnes (1969) program where teachers showed warm and supportive attitudes and engaged in frequent positive and reinforcing teacher-child interactions.

Other studies examining the relationship between affective behavior and positive child growth include Appel (1942), Katz (1968), Kounin and Gump (1961), Landreth (1943), Nesbitt (1943), Prather (1969), and Reichenberg-Hackett (1962). In general, the results of these studies show that teachers who establish warm and accepting environments, and who provide children with a sense of security and a willingness to take risks to learn, frequently produce children with more positive social, academic, and intellectual growth.

DIRECTIONS FOR PRACTICAL PROGRAMING

What conclusion can be reached about the relationships between instructional and affective teacher behaviors, including the self concept of the teacher, and positive child growth? Care must always be taken in generalizing from experimental studies to actual classroom practices; however, in this case the results of a number of empirical investigations provide solid support for the following suggestions:

1. Teachers of preschoolers should work to establish a warm and accepting environment where children feel a sense of security and a confidence in their own skills, which leads to a willingness to try new things.
2. Teachers should reinforce and praise more and criticize less. In other words, a positive approach pays larger dividends than a negative one. Teachers should monitor their behavior to deter-

mine how positive and negative they are toward their charges and change their behavior accordingly.

3. Teachers should provide frequent and specific feedback consisting of restating and analyzing the child's response in order to explain what was good about the response.
4. Structured instructional techniques that emphasize verbalizations in conjunction with the manipulation of concrete materials and guided questioning from the teacher are highly successful in promoting positive child growth.
5. During negative interactions between teacher and child, the teacher must recognize that the teacher's own feelings and attitudes may be a part of the problem.
6. Teacher training institutions should screen candidates carefully to select those who have good self concepts.
7. Administrators of teachers who have poor self concepts should make a genuine effort to help these staff members to enhance their self concept. Teachers themselves should endeavor to increase their self concept by improving their professional knowledge and skills.
8. Teacher training programs, while developing common goals, must provide students with alternative learning activities and multiple entry points. Prospective teachers need individualized programs.
9. Effective teachers must learn the principles of self evaluation to improve their effectiveness. Teachers can assess themselves in a number of ways including a diary or log of classroom experiences, audio and video tapes, feedback from coworkers, and outside evaluation from other professionals. Teachers must also recognize that other major sources of feedback include the reactions of children and parents.
10. Teachers of young gifted children with handicaps should recognize the important and complex role they play in promoting the child's talents and self concept as well as remediating the child's disabilities. Among the unique responsibilities of teachers of the gifted handicapped are (a) to recognize and help significant others (e.g., parents, older siblings, and relatives) identify a child's unusual talents in spite of a handicap; (b) to modify behaviors that are offensive to others and interfere with recognition of the child's unusual ability; (c) to help the gifted handicapped child to realistically recognize the limitations imposed by the disability and to work within the limitations to the best of his or her ability; (d) to adapt the curriculum to the gifted handicapped child's unique needs; (e) to provide the gifted child with opportunities for self directed learning; (f) to help the gifted handicapped child to accept and learn from failure and to persist in developing talents even though at times failure may be inevitable due to the handicap; (g) to write individualized education programs in areas of strengths as well as weaknesses.

REFERENCES

Appel, M. H. Aggressive behavior of nursery school children and adult procedures in dealing with such behavior. *Journal of Experimental Education*, 1942, 11, 185-199.

Beller, E. K. Dependency and independence in young children. *Journal of Genetic Psychology*, 1955, 87, 25-35.

Beller, E. K. *Methods of language training and cognitive styles in lower class children*. Paper presented at the meeting of the American Educational Research Association, New York, February, 1967.

Beller, E. K. Teaching styles and their effects on problem-solving behavior in Head Start programs. In E. Grotberg (Ed.), *Critical issues in research related to disadvantaged children*. Princeton NJ: Educational Testing Service, 1969.

Combs, A. W. *The professional education of teachers: A perceptual view of teacher preparation*. Boston: Allyn & Bacon, 1965.

Combs, A. W., et al. Florida studies in the helping professions. *University of Florida Social Science Monograph*, 1969, No. 37.

Coopersmith, S. *The antecedents of self-esteem*. San Francisco: W. H. Freeman & Co., 1967.

DiLorenzo, L., Salter, R., & Brady, J. *Pre-kindergarten programs for educationally disadvantaged children*. (Final report, Project No. 3040, US Office of Education). Albany: New York State Education Department, Office of Research and Evaluation, 1969.

Fagot, B. L. Influence of teacher behavior in the preschool. *Developmental Psychology*, 1973, 9 (2), 198-206.

Fortune, J. C. *A study of the generality of presenting behaviors in teaching preschool children*. Memphis TN: Memphis State University, 1967. (ED 016 285)

Jersild, A. T. Voice of the self. *NEA Journal*, 1965, 54, 23-25.

Karnes, M. B., et al. *Investigations of classroom and at-home interventions*. Vol. 1. *Research and development program on preschool disadvantaged children: Final Report* (Contract No. 5-1181, Bureau of Research, Office of Education, US Department of Health, Education, and Welfare). Bethesda MD: ERIC Document Reproduction Service, 1969. (ED 036 663)

Katz, L. G. *A study of the changes in xehavior of children enrolled in two types of Head Start classes*. Doctoral dissertation, Stanford University, 1968. (University Microfilms No. 68-15, 064)

Klaus, R., & Gray, S. The early training project for disadvantaged children: A report after five years. Monographs of the Society for Research in Child Development, 1968, 53, (Serial No. 120).

Kounin, J. S., & Gump, P. V. The comparative influences of punitive and nonpunitive teachers upon children's concept of school misconduct. *Journal of Educational Psychology*, 1961, 52, 44-49.

Landreth, C. Teacher-child contacts in nursery schools. *Journal of Experimental Education*, 1943, 12, 65-91.

Larsen, J. M. Effects of increased teacher support on young children's learning. *Child Development*, 1975, 46, 631-637.

McClure, S. C. The effect of varying verbal instructions on the motor responses of preschool children. *Child Development*, 1936, 7, 276-290.

Morrison, B. M. The reactions of external and internal pupils to patterns of teaching behavior. Unpublished doctoral dissertation, University of Michigan. Ann Arbor, *University Microfilms*, 1966, WO 66-14, 560.

Nesbitt, M. Student and child relationships in the nursery school. *Child Development*, 1943, *14*, 143-166.

Perkins, H. V. Classroom behavior and underachievement. *American Educational Research Journal*, 1965, *2*, 1-12.

Prather, M. Project Head Start teacher-pupil-parent interaction study. In E. Grotberg (Ed.), *Review of research 1965 to 1969*. Washington DC: Project Head Start (OEO), 1969.

Reichenberg-Hackett, W. Practices, attitudes and values in nursery group education. *Psychological Reports*, 1962, *10*, 151-172.

Rosenshine, B. Teaching behavior related to pupil achievement: A review of research. In I. Westbury & A. A. Bellack (Eds.), *Research into classroom processes*. New York: Teachers College Press, 1971.

Soar, R. S. *An integrative approach to classroom learning: Final report* (Public Health Service Grant No. 5-R11 MH 01096; National Institute of Mental Health Grant No. 7-R11 MH 02045). Philadelphia: Temple University, 1966. (ED 033 749)

Swift, J. W. Effects of early group experience: The nursery school and day nursery. In M. L. Hoffman & L. W. Hoffman (Eds.), *Review of child development research*. New York: Russell Sage Foundation, 1964.

Thompson, G. R., & Bowers, N. C. *Fourth grade achievement as related to creativity, intelligence, and teaching style*. Paper presented at the meeting of the American Educational Research Association, Chicago, February 1968.

Wallen, N. E. *Relationships between teacher characteristics and student behavior. Part III*. US Office of Education Cooperative Research Project No. 2628. Salt Lake City: University of Utah, 1966.

Weikart, D. P. *A comparative study of three preschool curricula*. Paper presented at the Biannual Meeting of the Society for Research in Child Development, Santa Monica, Calif., March 1969.

5 Promoting Self Concept in the Child

In the opinion of the authors, the development of a healthy and realistic self concept is a major goal of early education of the handicapped. Of course, a positive self concept is important for any child, but it may be even more important for handicapped children whose diabilities so often distort how they feel about themselves and how others feel about them.

There are many good definihions of self concept, but one of the best and most comprehensive is suggested by Coopersmith (1967), who defined self concept as

> The evaluation which the individual makes and customarily maintains with regard to himself: it expresses an attitude of approval or disapproval and indicates the extent to which the individual believes himself to be capable, significant, successful and worthy. In short, self-concept is a personal judgement of worthiness that is expressed in the attitudes the individual holds toward himself. (p. 4)

Certainly, it is not surprising that numerous empirical investigations suggest that a child's self concept has profound effects on academic, social, and personal development. What is surprising, however, is that so much attention has been focused on children 9 years of age and older and so little on very young children. Only recently has a small body of preschool literature begun to develop.

Woolner (1971), for instance, asserted on the basis of interaction with and observation of preschool children that the critical time for teachers to assist in improving self concept is during early childhood. As she sees it, the more positive the young child's self concept, the more secure the child feels and the less dependent the child is on direction and evaluation from others. According to Woolner, positive self concept gives the young child strength to face occa-

sional conflicts without frustration and helps the child to understand that "the world is a safe and orderly place in which to live and function" (p. 60).

Butler (1969) also stressed the importance of self concept development during the preschool years. She maintained that by age 3 a child has developed a well integrated view of the self that becomes the core and precipitator of future behavior:

> Life is not over at age three, but the general view toward the world and toward oneself is already present. Possibilities for change exist, but the longer a behavior persists the more difficult it is to change. (p. 161)

Gordon (1969) emphasized the danger of a negative self concept, claiming that "for very young children, negative self views may be as damaging as physical illness or actual physical handicap" (p. 378). Educators, he argued, must create nurturing environments early so that a child's self concept may emerge as "positive as possible" (p. 379).

Landry, Schilson, and Parden (1974) investigated the effect of a preschool self concept enhancement program on a group of 4 year olds and found significant increases in the self concept of the experimental group. These researchers concluded that "self-enhancing education does increase a person's concept of self at the preschool level" (p. 43).

REVIEW OF THE LITERATURE

In an attempt to make this review of the research concerning self concept more readily accessible to the reader, the literature summarized here has been classified under the following questions. What is the relationship between self concept and achievement? What role do parents have in the development of the child's self concept? What is the teacher's role in promoting the child's self concept?

Self Concept and Academic Achievement

Teachers of young handicapped children are concerned about the maximum academic achievement of their young charges. It is therefore important to review some of the research on the relationship between self concept and academic achievement even though these studies were conducted with older and, for the most part, nonhandicapped children. Overall, the evidence clearly shows a persistent and significant relationship between self concept and academic achievement (e.g., Campbell, 1965, Simon & Simon, 1975). As LaBenna and Greene (1969) concluded:

> Empirical and experimental data clearly indicate a direct relationship between the child's self-concept and his manifest behavior perceptions and academic performance. (p. 24)

Although it is generally held that positive self concept correlates with academic achievement, not all studies support this conclusion. Fiedler, Dodge, Jones, and Hutchins (1958) and Wass (1968) are among those who failed to find positive relationships.

A number of studies have investigated the relationship between reading achievement and self concept. Green (1970), for instance, reported that the self concepts of developmentally immature first graders improved after an extended reading readiness program. Wattenburg and Clifford (1964) investigated the extent to which a self concept measure might predict later reading proficiency by administering a measure of self concept to 128 children in kindergarten and a measure of reading achievement when these children were in second grade. Results showed that the measure of self concept was more predictive of reading achievement than a measure of IQ, and the researchers thereby concluded that "self-concept phenomena are antecedent to and predictive of reading accomplishment" (p. 466). Lamy (1962) administered self concept measures to children in kindergarten prior to reading instruction and again in first grade to determine the effectiveness of self concept in predicting reading achievement. Results indicated that self concept measures correlate as strongly with reading achievement as intelligence scores, although the two scores taken together are a better predictor of reading success than either score separately. In a study by Hutchinson (1972), the relationship between the self concepts of intermediate grade children and attitudes toward reading was assessed. She also concluded that the child's attitude toward reading is positively related to self concept.

Not all studies find significant relationships between reading achievement and self concept. For example, the research of Butcher (1967), Wass (1968), and Williams (1973) indicated no significant relationships between reading achievement and self concept at the primary level. Those findings, it should be noted, are in the minority, but one should not overlook the circular nature of the cause and effect relationships in this instance: Poor self concept may indeed cause poor achievement, but poor achievement in turn leads to a poor self concept.

The Parents' Role

Judging from the available research literature (e.g., Brookover, Patterson, & Thomas, 1965; Coopersmith, 1967), as well as the opinions of educational theorists and practitioners, one cannot doubt that parents and the home environment play a vital role in the development of the child's self concept.

Coopersmith (1967), in an extensive investigation of the role the home environment plays in enhancing self esteem, identified three primary conditions that lead children to value themselves and to regard themselves as worthwhile: (a) *parental warmth* in which the

child senses the family's love and concern and comes to understand that they see the child as a person of value, (b) *respectful treatment* in which the child's views are considered and the child has a rightful and democratic position in the family, and (c) *clearly defined limits* in which the child comes to know that his or her parents hold certain demands for the child's success and most importantly that they care what happens to the child. Coopersmith asserted that together these conditions constitute a parental attitude of positive regard and affection. Coopersmith also found, however, that certain factors are not related to a positive self concept, including punishment, amount of time spent with parents, physical attractiveness, height, education, and income.

The Teacher's Role

A number of writers have stressed the role teachers play in the development of a positive self concept in their students. Davidson and Lang (1960), for instance, examined how self concept is influenced in a classroom setting by studying the relationships between children's perceptions of their teacher's feeling toward them and the

Promoting the development of a healthy self concept is a primary goal of an early education program.

children's perceptions of themselves. Relationships were also examined between these variables and academic achievement and classroom behavior. A positive correlation on all measures was found, and the investigators concluded that the teacher's feelings of acceptance and approval are transmitted to the child and perceived by the child as a positive appraisal. Thus, according to Davidson and Lang, the teacher's positive feelings begin a cycle: The child achieves and the teacher's feelings cause the child to strive for further approval.

Staines (1958) found that changes in the child's self concept do occur as an outcome of the learning situation; positive learning circumstances lead to a positive self concept. The writer also suggested that teaching methods can be adapted so that definite changes in the child's self concept occur without loss of academic gain. Staines concluded that self concept must be recognized as an important factor in learning.

Coopersmith (1967) asserted that a central item contributing to the development of positive self esteem is "the amount of respect, acceptance and concerned treatment that an individual receives from significant others in his life" (p. 37). This position places an important responsibility on the teacher, especially at the preschool and elementary level, since the teacher must be considered a highly significant other in a child's life.

Studies by Rosenthal and Jacobson (1966) illustrated that children whose teachers expect them to gain intellectually tend to show such gains; in fact, they show greater gains than do children for whom gains are not expected. The writers suggested that teachers—through tone of voice, facial expression, touch, and posture—treated pupils who were said to be bright or who were otherwise expected to make greater intellectual gains differently from children in the group for whom they did not hold similar expectations.

Henderson and Long (1971), investigating the personal and social characteristics of successful first graders, cited qualities of classrooms that promote a healthy self concept:

> For these children significant changes toward greater classroom success could probably be achieved only by a classroom situation where a great deal of individual attention and instruction and warm and close teacher-pupil relationships would produce an atmosphere which would build up their trust and confidence. (p. 112)

Richardson (1965) stressed the important role the teacher plays in developing self concept:

> The teacher is in control of several aspects of learning which have a direct impact upon each child's perceptions of himself as adequate—worthy or inadequate and unworthy. While the parent has influenced the child's self-concept earlier, the teacher has a more powerful influence, especially in aspects of

> the self-concept relating to intelligence and competencies. Consciously or unconsciously the child thinks who can know better than the teacher whether I am bright or dumb? Early and careless estimates of children's abilities, while often erroneous, have a lasting effect. (p. 41)

A small group of research studies provides general suggestions about how teachers may enhance the child's self concept. Spaulding (1963) reported a significant relationship between student self observed, positive self concept and the degree to which teachers are calm, accepting, supportive, and facilitative of learning. Conversely, Spaulding reported a greater frequency of negative self concept when teachers were perceived as threatening, grim, and sarcastic. Jourad (1964) and Rogers (1967) stressed that a student's perception of the teacher as honest and not putting up a "front" when praising and interacting with the student is conducive to promoting a positive self concept.

Coopersmith (1967) investigated classroom environments and concluded that a positive self concept is fostered by an environment that is well structured and reasonably demanding rather than one that is unlimitedly permissive. Purkey (1970) also investigated the kind of classroom conducive to developing favorable self images in students and identified these qualities: (a) *challenge*, the degree to which the teacher sets expectations and encourages children to solve problems; (b) *freedom*, providing students with opportunities to make meaningful decisions in unthreatening, encouraging environments; (c) *respect*, the basic feeling by the teacher for the worth and dignity of students; (d) *warmth*, providing a psychologically safe, supportive learning situation; (e) *control*, maintaining a disciplined environment; and (f) *success*, providing an environment where children can learn the value of achieving a goal or completing a task correctly.

DIRECTIONS FOR PRACTICAL PROGRAMING

Certain implications can be derived from research findings concerning the self concept of nonhandicapped children of all ages and applied to the education of young handicapped children.

1. Avoid labeling the child.
2. Demonstrate respect and liking for the child.
3. Manifest interest by listening to the child.
4. Provide the child with activities in which success can reasonably be assured.
5. Praise the child's efforts and achievements.
6. Encourage the development of the child's strengths or talents as well as helping to eliminate weaknesses.
7. Couple realistic long range goals with short term objectives for the child.

8. Provide the child with feedback regarding performance.
9. Support the child's efforts to explore new areas and attempt new tasks.
10. Develop an individualized plan that will enable the child to develop skills and acquire competencies.
11. Observe the child developmentally, concentrating on what the child can do and what help he or she needs to progress to the next level of development rather than concentrating on what the child cannot do.
12. Provide a warm, accepting environment where the child feels safe and has a sense of belonging.
13. Encourage the child's self expression in various ways and through a number of media.
14. Stress with parents the importance of fostering a positive self concept in their handicapped child.
15. The authors feel that it is important for both parents and teachers to recognize the unique problems associated with the development of a healthy self concept among gifted children with handicaps. Frequently, the development of a positive self view among these children is problematic due to the conflicting nature of the gifted and handicapped conditions. Parents and teachers often overlook the gifted child's unusual abilities and focus on the handicaps. This can result in lower expectations by significant people in the child's life. Similarly, most gifted children, whether handicapped or not, are highly self critical and set extremely high goals for their own performance. This can lead to frustration, especially if the child's handicap inhibits performance goals. To help ensure the development of a healthy self concept among the gifted handicapped, fundamental changes in the attitudes and beliefs of both parents and teachers toward the gifted handicapped child must be effected. Among the attitudes and beliefs that will foster a positive self concept are:

    - Recognizing and appreciating the child's talents rather than focusing only on weaknesses.
    - Providing the gifted handicapped child with frequent opportunities to interact with nonhandicapped peers of similar abilities and talents.
    - Setting high, but realistic, expectations for performance in areas of gifts or talents.
    - Providing the child with opportunities to develop self directed learning including participation in the selection of goals and of content and activities to achieve these goals.
    - Helping the child to understand the limitations imposed by his or her disability but at the same time encouraging the child to develop normally.
    - Seeking educational services designed to enhance the child's

talents as well as remediate the child's disabilities, as early as possible.

REFERENCES

Brookover, W. B., Patterson, A., & Thomas, S. Self-concept of ability and school achievement. *Sociology of Education*, 1965, *37*, 271-278.

Butcher, D. G. *A study of the relationship of student self-concept to academic achievement in six high achieving elementary schools.* Doctoral dissertation, Michigan State University, 1967. (University Microfilms No. 68-7872).

Butler, A. L. The challenge of young children. *Theory into Practice*, 1969, *8* (3), 158-163.

Campbell, P. B. *Self-concept and academic achievement in middle grade public school children.* Unpublished doctoral dissertation, Wayne State University, 1965.

Coopersmith, S. *The antecedents of self-esteem.* San Francisco: W. H. Freeman, 1967.

Davidson, H. H., & Lang, G. Children's perceptions of their teachers' feelings toward them related to self-perception, school achievement and behavior. *Journal of Experimental Education*, 1960, *29* (2), 107-118.

Fiedler, F. E., Dodge, J. S., Jones, R. E., & Hutchins, E. B. Interrelations among measures of personality adjustment in non-clinical populations. *Journal of Abnormal and Social Psychology*, 1958, *56*, 345-351.

Gordon, S. The beginnings of the self: The problem of a nurturing environment. *Phi Delta Kappan*, 1969, *50*, 375-378.

Green, F. D. Self-concept: A first-grade study (Doctoral dissertation, University of Arkansas). *Dissertation Abstracts International*, 1970, *31*, 06A, 2612.

Henderson, E. H., & Long, B. H. Personal-social correlates of academic success among disadvantaged school beginners. *Journal of School Psychology*, 1971, *9* (2).

Hutchinson, M. *A study of the relationship of intermediate-grade children's self-esteem and their attitude toward reading.* Unpublished manuscript, Morningside College, Sioux City, Iowa, 1972.

Jourad, S. M. *The transparent self: Self-disclosure and well-being.* Princeton NJ: D. Van Nostrand Co., 1964.

LaBenna, W. D., & Greene, B. I. *Educational implications of self concept theory.* Pacific Palisades CA: Good Year Publishing Co., 1969.

Lamy, W. Relationships of self-perceptions of early primary children to achievement in reading (Doctoral dissertation, University of Florida). *Dissertation Abstracts International*, 1962, *24*, 16A, 628.

Landry, R. G., Schilson, E., & Parden, F. M. Self-concept enhancement in a preschool program. *Journal of Experimental Education*, 1974, *42* (1).

Purkey, W. W. *Self-concept and school achievement.* Englewood Cliffs NJ: Prentice-Hall, 1970.

Richardson, S. The teacher's influence upon the learner's self concept. *Claremont Reading Conference Thirty-Second Yearbook*, 1965.

Rogers, C. R. The therapeutic relationship: Recent theory and research. In G. Babladelis & S. Adams (Eds.), *The shaping of personality.* Englewood Cliffs NJ: Prentice-Hall, 1967.

Rosenthal, R., & Jacobson, L. Teacher expectations for the disadvantaged. *Scientific American*, 1966, *218*, 19-23.

Simon, W. E., & Simon, M. G. Self-esteem, intelligence and standardized academic achievement. *Psychology in the Schools*, 1975, *V12* (1), 97-99.

Spaulding, R. L. *Achievement, creativity, and self-concept correlates of teacher-pupil transactions in elementary schools* (Cooperative Research Report No. 1352). Urbana: University of Illinois; US Office of Education, 1963.

Staines, J. W. Self-picture as a factor in the classroom. *British Journal of Educational Psychology*, 1958, *28*, 97-110.

Wass, H. L. K. *Relationships of social-psychological variables to school achievement for high and low achievers.* Doctoral dissertation, University of Michigan, 1968. (University Microfilms No. 69-2403)

Wattenburg, W. M., & Clifford, C. Relation of self-concepts to beginning achievement in reading. *Child Development*, 1964, *35*, 461-467.

Williams, J. H. The relationship of self-concept and reading achievement in first grade children. *The Journal of Educational Research*, 1973, *66* (8), 378-380.

Woolner, R. B. Self-concept—What is it? *Instructor*, March 1971, p. 60.

6 Ongoing Assessment Leading to Programing

Assessment precedes the design of an individualized education program for the young handicapped child. As a process, assessment enables the teacher to become familiar with a child's skills and deficiencies early and in a way that can be used directly to improve educational planning. In short, assessment provides the educator with the basic data upon which to base instructional decisions.

Assessment can be defined in many ways, but it generally involves a systematic and objective observation and analysis of a child's skills and deficits to determine a starting point for educational programing; ongoing assessment helps to evaluate the effectiveness of current instruction and to suggest new directions for educational plans. Assessment is usually conducted by the teachers, with the help of paraprofessionals and parents and frequently with the aid of ancillary personnel such as speech therapists. The behavior measured may include language, motor, perceptual, social, self help, and cognitive skills and, in some instances, math and reading readiness skills.

As a dynamic process, then, assessment involves five general steps: (a) determining the educational goals for the program, (b) assessing the child's functional level on each of those goals via systematic observation, (c) designing and implementing an individualized educational intervention as a means of achieving those goals, (d) periodically reassessing the child's progress toward meeting those goals via systematic observation, and (e) depending on the results of the reassessment, continuing the present instructional plan or devising a new strategy to achieve the goals.

REVIEW OF THE LITERATURE

The literature on early educational assessment is almost entirely descriptive. The instruments themselves are of varied kinds: Some are

standardized, some are not; some have been published and widely disseminated and others are unpublished and used only in local projects. The items included in most assessment instruments, however, tend to have much in common and are generally sequenced from simple to complex and derived from one or more of three principal sources: (a) standardized tests such as the Stanford-Binet IQ test or the Illinois Test of Psycholinguistic Abilities (ITPA), (b) observations of young children in classroom settings by practicing teachers and educational experts, (c) developmental guidelines such as that compiled by Gesell and Ilg (1949).

These assessment tools also tend to share a number of problems in common. Often, the testmaker has failed to provide data to back claims that items are developmentally sequenced, and the instrument may not have been tested with a large and representative sample of children. Thus, teachers and administrators must be aware that unless the authors of an assessment instrument explicitly report data, the developmental nature of the assessment tool remains in question.

A second problem related to the use of preschool assessment instruments is that their authors sometimes fail to report reliability data. The issue here, of course, is that the instrument may be constructed in such a way that two observers cannot be certain they are viewing the same behavior. Accompanying instructions often are not specific enough to convey to the user exactly what is to be observed. Thus, instructional decisions made by two professionals observing the same behaviors may differ because of lack of clarity regarding what is to be observed.

A third problem concerns the inappropriate use of screening devices. Many program developers use screening devices such as the Denver Developmental Screening Test (Frankenburg, Dobbs, & Fandal, 1970) for assessment purposes. Screening devices, however, are gross measures designed to detect the possibility of a handicap and are not specific enough to be used to determine instructional goals. Using screening devices for assessment is analogous to using IQ tests to determine specific developmental disabilities. The purpose for which a test was designed must govern its use.

Finally, many instruments do not offer task analyses in sufficient detail for use with many young handicapped children. As a result, the child's initial level of functioning is not recorded accurately, and small, but significant, levels of progress cannot subsequently be detected.

Despite these problems, the proliferation of assessment instruments and the growing interest among classroom teachers and program developers in the assessment process is a positive trend. The idea of developmental assessment is not of recent origin (Kirk, Karnes, & Kirk, 1955), but only recently have the techniques found their way into the field. It is hoped that many of the problems associated with assessment instruments will be eliminated in the near

future and teachers will be able to make more accurate and informed decisions.

Selected Assessment Instruments

The list of assessment instruments included here is not complete, but it does include the more widely used instruments in early childhood special education.

- The Learning Accomplishment Profile (LAP), developed by Anne Sanford (1974) at the Chapel Hill Training Outreach Project, is probably the most widely used assessment instrument, especially among Head Start personnel. This criterion referenced instrument is designed to be used as both an initial and an ongoing measurement of gross motor, fine motor, social, self help, cognitive, and language skills. LAP has three sections: The first consists of developmental data for assessing the child's existing skills; the second provides the teacher with guidance in sequencing skill development; the third offers 44 weeks of curriculum units. The age range is 1 to 72 months, and the test may be administered individually by the teacher or used as a guide to observation of the child in the classroom.
- In Schaumberg, Illinois, the Schaumberg Early Education Project, relying on a Piaget based approach, has developed a checklist of developmental milestones. The areas covered include self help skills, intellectual development, socioemotional development, language, and motor skills. A notable feature of the Schaumberg instrument is its attempt to identify sensory motor behaviors that serve as precursors to language development in the hope that systematically programing for these sensory motor skills will facilitate language development.
- The Circle Preschool Inventory, developed in Piedmont, California, by Frankhauser and associates (1976), is a synthesis of items used in other early education programs and is designed to be used by the teacher to observe the child's ongoing behavior in the classroom. It provides information on the child's functioning in six areas: language, cognition, gross motor skills, fine motor skills, socioemotional skills, and self help skills. In addition, items on the assessment correspond to specific lesson plans contained in the curriculum guide. The age range for this inventory is 12 to 72 months.
- In Athens, Georgia, the Rutland Center has developed an assessment instrument for emotionally disturbed young children. A curriculum based on a behavioral analytic approach and corresponding to the assessment instrument is the central focus for programing in this project.
- In Memphis, Tennessee, Project Memphis, a demonstration training program serving handicapped children 0 to 5 years of age, has developed a teacher administered assessment instrument covering personal social, fine motor, gross motor, language, and perceptual cognitive skills. A curriculum, *Lesson Plans for Enhancing Pre-*

school Developmental Progress, accompanies the assessment instrument and is characterized by the use of behavioral objectives and small, sequential programing steps.

- Siegfried Engelmann's Basic Concept Inventory (1967) is an individually administered, criterion referenced checklist of basic academic concepts. The Basic Concept Inventory has three sections: basic concepts (using picture cards), statement repetition, and pattern awareness. A manual describes how test results should be used to prepare the disadvantaged and handicapped child for the first grade.
- The staff at the Seattle Model Preschool Center for Handicapped Children has developed the Preschool Profile, a communications assessment for use by classroom teachers. The profile lists communication categories in developmental sequence and in correlation with other areas of child development. Appropriate expectations are classified under three communicative categories: asks, tells, and answers.
- Another assessment device, developed by Pamela Gross and her colleagues at the University of Washington, Seattle, offers carefully defined behavioral objectives—Developmental Pinpoints—for use with young severely and profoundly handicapped children (Hayden & Edgar, 1977). The Developmental Pinpoints provide detailed sequences for fine motor, gross motor, receptive language, expressive language, prereading, premath, music, self help, social, reinforcement, memory, and general behavior.
- The Marshalltown project, Marshalltown, Iowa, has developed a Behavioral Development Profile (Alpern & Bells, 1972) to assess communication, social, and motor skills. The Behavioral Development Profile is also used as the basis for programing in the home.
- Still another assessment system that bears mentioning comes from the Technical Assistance Resource Center in Early Childhood Education for the Handicapped at the Meyer Children's Rehabilitation Institute in Omaha, Nebraska. Associates at this institution have developed a three volume prescriptive teaching package. The first volume contains teaching cards that correspond to sequential skill checklists in receptive and expressive language and motor, preacademic, social, emotional, and self help behavior. The second volume suggests methods for using the teaching cards and skill lists in the classroom, and the third volume lists equipment and materials for use in preschools for the handicapped. A film illustrating techniques for evaluating, diagnosing, and writing educational prescriptions for handicapped children ages 2 to 6 is also available.
- The Carolina Developmental Profile, developed by David Lillie and Gloria Harben (1974) and published by TADS, is a criterion referenced checklist designed to help the teacher establish longitudinal educational objectives in six areas: fine motor, gross motor, visual perception, reasoning, receptive language, and expressive language. The format for each task includes description, appropriate develop-

mental age, needed materials, and criteria for determining mastery. The age range for the Carolina Developmental Profile is 2 to 5 years.

- The *Portage Guide to Early Education* (1976) provides a sequenced developmental checklist encompassing 450 separate behaviors. The checklist corresponds to curriculum cards, which contain lessons designed to meet behavioral objectives for children ranging in age from 0 to 5 years. The following areas are included: cognition, language, self help, motor, and socialization. Although the Portage Project is a home based program, many preschool classroom teachers find this checklist useful.
- In Dallas, Texas, the Special Education Department of the Dallas Independent School District has developed a classroom assessment inventory titled KIDS (Kindling Individual Development Systems) Inventory of Development Scale (1975). This assessment device provides the teacher with developmental milestones for the age range 0 to 72 months in gross motor, fine motor, cognitive-language, and self care behavior. A manual explaining scoring and instrument validation procedures is included.
- The Santa Clara Inventory of Developmental Tasks (Garner, 1974) is a developmentally sequenced instrument designed for both screening and classroom assessment in the following areas: motor coordination, visual-motor performance, visual perception, visual memory, auditory perception, auditory memory, language development, and conceptual development. A curriculum guide to educational activities in each of these areas is included.
- Since 1967, Karnes and her associates at the University of Illinois have been developing and refining a systematic procedure for classroom based assessment called SCOAP (Systematic Child Observation Assessment and Programming). The purpose of SCOAP is to provide the teacher with a measurement of a child's strengths and weaknesses in five areas: motor, self help, social, language, and math. SCOAP helps the teacher to determine the current educational needs of the child by pinpointing the level of functioning in each area and goes on to suggest activities for helping the child to acquire the prerequisite skills necessary to make progress through the developmental levels in each area. SCOAP provides the teacher with a starting point at which to begin instruction and a system of ongoing evaluation to measure the effectiveness of instruction.

The SCOAP system is organized into three areas: developmental guidelines for observation, assessment procedures, and suggested activities or techniques that correspond to the areas in the developmental guidelines. Skills in each area are divided by levels according to the age at which skills are consistently exhibited: Level I—0-2 years; Level II—2-3 years; Level III—3-4 years; Level IV—4-5 years; Level V—5-6 years.

- A final classroom assessment instrument that bears mentioning is the talent checklist developed by the RAPYHT (Retrieval and Acceleration of Promising Young Handicapped Talented Children)

project at the University of Illinois. The talent checklist assesses unusual abilities in intellectual, academic, creative, social, artistic, and psychomotoric areas. The talent checklist is used both as a source of initial identification and as an indicator of ongoing development in areas of talent for young gifted handicapped children. This instrument is designed for use by parents as well as teachers and structures observations of gifted handicapped children in naturalistic settings. The talent checklist is currently undergoing intensive field testing at RAPYHT distal sites throughout Illinois.

DIRECTIONS FOR PRACTICAL PROGRAMING

1. Any assessment procedure must be multidimensional, since development in one area is frequently related to development in other areas. It is imperative to determine the child's strengths as well as weaknesses in critical areas so that programing can reflect the total needs of the child.
2. The field of early education must continue to work toward developing reliable and valid assessment instruments. In spite of the difficulties in assessing the development of young children, such efforts will result in instruments that are more helpful to those involved in planning and implementing educational programs for young children.
3. Parents can play important roles in the assessment process. They have a vast store of knowledge about their child that must be tapped. They can be trained to become even better observers of their child and thus will have more valid information to contribute to educational planning for their child.
4. It is important to recognize that assessment procedures are designed not only to identify a child's initial level of functioning but are also useful in assessing a child's progress throughout the school year. Ongoing observation ensures appropriate programing.
5. There should be as close a match as possible between the goals of the educational program and the child's stage of development in given areas. It is important to remember that the major purpose of assessment is to inform the teacher about the child's developmental level of functioning.
6. Teachers should recognize the important role they play in the data collecting process. Because of their daily association with children in familiar settings, teachers can observe natural performance and judge whether assessment instruments offer a fair representation of a given child's behavior.
7. The results of assessment should be interpretable to parents.
8. The results of assessment should be easily translated intc an individualized educational plan for the child.
9. Use of assessment instruments should be delayed until the chilo has had an opportunity to adjust to a new situation so that a

more accurate appraisal of typical behavior can be made. Experience indicates that an adjustment period of at least 2 days allows the child to become familiar with classroom routines, to develop rapport with the teacher, and to become familiar with other children.

10. Teachers can conduct assessment during structured periods or by observing the child in more naturalistic settings such as free play.
11. Teachers must be thoroughly acquainted with the assessment instrument before beginning to collect data. Advance preparation is essential.
12. Teachers may find certain background information (medical reports, speech and language reports, parent information forms) useful in conducting assessment. For example, a history of repeated ear infections should alert the teacher to possible problems with auditory activities and even with verbal directions. Knowing this kind of information permits the teacher to make special preparations.
13. Teachers may find it useful to draw items from a variety of assessment instruments rather than to rely on a single assessment instrument. The assessment instruments chosen must be compatible with the goals of the program.
14. Assessment instruments should be sensitive to the culture, language, and handicap of the child. Special educators must be aware that biased assessments cannot produce effective programing and may do irreparable harm to the child.
15. Teachers should recognize that ongoing classroom assessment is important for the gifted and talented handicapped child as well as for nontalented handicapped children. Continued assessment in areas of talent, handicap, and general development leading to the establishment of individualized objectives for the gifted handicapped child is imperative.

REFERENCES

Alpern, A., & Bells, C. *Behavioral development profile.* Arlington VA: ERIC Document Reproduction Service, 1972. (ED 079 917)

Engelmann, S. E. *Basic concept inventory.* Chicago: Follett Educational Corp., 1967.

Frankenburg, W. K. Increasing the lead time for the preschool aged handicapped child. In J. B. Jordan & R. F. Dailey (Eds.), *Not all little wagons are red—The exceptional child's early years.* Arlington VA: The Council for Exceptional Children, 1973.

Frankenburg, W. K., Dobbs, J. B., & Fandal, A. W. *Denver developmental screening test.* Denver: University of Colorado Medical Center, 1970.

Frankhauser, C., Fazio, A., Glessman, N., Harley, T., Hering, S., & Oliver, A. *Circle preschool individual assessment.* Piedmont CA: Circle Preschool, 1976.

Garner, W. (Ed.). *Santa Clara inventory of developmental tasks.* West Collingswood NJ: Richard L. Zweig Associates, 1974.

Gesell, A., & Ilg, F. L. *Child development: An introduction to the study of human growth*. New York: Harper, 1949.

Hayden, A. H., & Edgar, E. B. Identification, screening, and assessment. In J. B. Jordan, A. H. Hayden, M. B. Karnes, & M. M. Wood (Eds.), *Early childhood education for exceptional children: A handbook of ideas and exemplary practices*. Reston VA: The Council for Exceptional Children, 1977.

Kirk, S. A., Karnes, M. B., & Kirk, W.D. *You and your retarded child: A manual for parents of retarded children*. Palo Alto CA: Pacific Books, 1955.

Lillie, D. L., & Harben, G. L. *Carolina developmental profile*. Chapel Hill NC: Technical Assistance Development Systems (TADS), University of North Carolina, 1974.

Portage guide to early education. Portage WI: The Portage Project, 1976.

Sanford, A. *Learning accomplishment profile (LAP)*. Winston-Salem NC: Kaplan School Supply Corp., 1974.

7 Individualization of Instruction

Individualized instruction, the personalizing of instruction to meet the needs and abilities of each child, is one of the most significant trends in education and represents a synthesis of philosophical and psychological thought on which educators of diverse theoretical positions agree. Indeed, educators support individualized instruction as a response to the current demand for accountability in federal legislation and as a means to improve the quality of classroom teaching.

Individualized instructional programs are not new in American education; however, only in the last decade or so have such programs received widespread support from academic (e.g., Dunn, 1973) and legislative circles (e.g., Public Law 94-142). Today, in the education of exceptional children of all ages, individualized educational planning is considered imperative, and a multitude of teacher education programs currently prepare personnel to implement these procedures effectively. Yet, for many practicing teachers individualized education remains a mystery, which is often misunderstood and at times a source of great anxiety.

REVIEW OF THE LITERATURE

The research reviewed in this section focuses on providing answers for two basic questions teachers often ask about individualizing instruction for young handicapped children: Why do educators support individualized instruction? What does research suggest concerning the effectiveness of individualized instruction?

Why Educators Support Individualized Instruction

The basic argument in support of individualized instruction is based on a large body of theoretical and empirical evidence that suggests

that students at any age differ in interests, motivation, learning rate, goals for learning, and capacity to learn (e.g., Hambleton, 1974). Group instruction that relies on a common curriculum cannot, therefore, meet individual needs. Numerous other propositions, advanced by a number of authors, justify the need for an individualized approach, including:

1. The belief that children learn through various cognitive and perceptual structures that affect the amount, the type, the speed of assimilation, and the retention of educational content (Dunn, 1973).
2. The belief that learners need to develop a wide variety of learning styles for effective learning outcomes (Joyce, 1975).
3. The argument that the complexity of contemporary society requires children to learn on their own, thus necessitating an educational approach that is directed toward teaching the child to acquire information and solve problems using individual cognitive styles (Glaser & Cooley, 1973).
4. The knowledge that individualized instruction negates the adverse effects of ability grouping on the child's self esteem (Glaser & Cooley, 1973).
5. The knowledge that individualized instructional procedures provide for greater accountability (Karnes et al., 1968).
6. The belief that learning takes place on an individual basis and that school experiences must therefore be organized for each separate child (Bishop, 1971).
7. The understanding that learning is an active rather than a passive process and must therefore involve participation in the instructional task (Stahl & Anzalone, 1970).
8. And finally, the belief that each individual needs to develop qualities of individuality in order to cope with the complexities, contradictions, and uncertainties of mass society. Schools should treat each student as a person of worth and dignity and recognize that the student is a client whose interests are served by the school (Heathers, 1975).

Effectiveness of Individualized Instruction

A number of research investigations concerned with intellectual development have compared the effects of individualized and group based instruction (e.g., Druker, 1963; Hilson et al. 1964), academic achievement (e.g., Halliwell, 1963), and pupil (e.g., Webb, 1969) and teacher perceptions (Besvinick & Crittenden, 1968). Studies have been conducted with university (e.g., Rollins, 1967), high school (e.g., Webb, 1969), and elementary subjects (e.g., Halliwell, 1963), and to a lesser extent with kindergarten and preschool children (e.g., Blank, Koltuv, & Wood, 1972). Since preschool teachers are concerned with the performance of elementary as well as preschool populations, this review begins with studies in that area.

Much of the research on individualized instruction has been conducted with children of elementary age (Malan & Merrill, 1971). Typically, these studies compare the intellectual (Hilson et al., 1964), general academic (Shapski, 1960), and specific academic achievement (Carbone, 1961) of an experimental group receiving individualized instruction with that of a group receiving group based instruction on a common curriculum. A few writers have also examined the effects of individualized instruction on teacher perceptions about their own effectiveness (Besvinick & Crittenden, 1968).

Results of these studies are mixed; some studies report results favoring individualized instruction (Druker, 1963), while others favor traditional programs (Carbone, 1961), and still others report inconclusive results (Bosco, Harring, & Bandy, 1976).

Typical of the studies favoring individualized instruction is Hilson et al. (1964). These researchers conducted a 3 year study comparing the effects of an individualized reading approach with a group based approach on intellectual, general academic, and reading achievement. Experimental subjects chose their own reading materials and received instruction on a one to one basis. Subjects in the traditional group received instruction in a group setting with teacher selected materials. Over 200 children in each group were tested at the end of first, second, and third grades on the Metropolitan Achievement and Reading Readiness tests and on the Primary Mental Abilities test. Results at the end of each of the 3 years showed a significant difference on each dependent measure favoring the individualized instruction group.

Similar results favoring individualized instruction were reported by Halliwell (1963). He compared the achievement of 146 primary pupils who had been taught for approximately 1 year under an individualized approach in reading and spelling with the achievement of 149 pupils who had been taught solely with traditional, group based instruction. At the end of 1 year the individualized group demonstrated significantly higher gains in reading, spelling, and IQ.

Shapski (1960) undertook an investigation to determine whether second and third grade pupils in an individualized program in reading achieved better than pupils in a traditional program and whether achievement in reading was superior to achievement in other academic areas. She found that pupils in individualized programs were significantly superior in reading and that reading achievement was superior to arithmetic and spelling achievement.

Carbone (1961) is among those who found traditional, group based procedures superior to an individualized approach. He compared the achievement of 122 pupils taught in an individualized primary program with 122 pupils taught in a traditional program. Both groups were matched on the basis of sex and age, and the influence of mental ability was held constant by means of analysis of covariance. Pupils from the traditional program were found significantly superior to the experimental pupils in areas of reading and arith-

metic. Differences in language achievement were not significant. Koontz (1961) also reported superior findings for traditional groups.

A substantial portion of the literature on individualized instruction for elementary children is devoted to the description and evaluation of commercially produced, individualized learning packages, such as Individually Prescribed Instruction (IPI) (Glaser, 1968, 1970), Program for Learning in Accordance with Needs (PLAN) (Flanagan, 1967, 1969), Computer-Assisted Instruction (CAI) (Atkinson, 1968; Atkinson & Wilson, 1969; Suppes, 1966), and the Individualized Mathematics Curriculum Project (Devault, Kriewall, Buchanan, & Quilling, 1969). These packages are characterized as concept centered and list student objectives in behavioral terms. They contain multidimensional learning materials and activities and provide for pretest and posttest evaluation procedures. In general, these packages have been effective across groups of children in enhancing general and specific academic achievement. They have been especially effective with slow learning and disadvantaged children (Hambleton, 1974).

There is a dearth of empirical investigations on individualized instruction in early childhood. In fact, in an extensive review of the literature on individualized instruction the authors found only two research studies with kindergarten and preschool age children.

In the first study, Spollen and Ballif (1971) compared the effectiveness of an individualized instructional approach with a traditional kindergarten approach in enhancing the cognitive readiness, visual perception, language, and general mental development of kindergartners displaying a developmental lag. Children in the experimental group had a lower pupil-teacher ratio, and teachers used individualized educational plans for programing language and perceptual motor development. Individualized education programs were changed monthly according to the child's needs, and a large variety of materials was made available to the teacher. Pretest and posttest results on general mental development (Stanford-Binet IQ), body awareness (Gesell Complete-A-Man Drawing), visual perception (Frostig), language (ITPA), and general development (Metropolitan Readiness Test), using an analysis of covariance, showed no significant differences by treatment or sex or by any other criterion measure between the individualized and traditional approaches.

In the second study (Blank, Koltuv, & Wood, 1972), two strategies for individualizing instruction were compared for their effectiveness with disadvantaged kindergarten children. The first strategy—the structured tutorial approach—employed paraprofessionals in a daily 15 minute one to one session with each child. The tutorial approach was characterized by use of highly specific, language oriented content; carefully selected materials; and specific instructional procedures including precise error correction and the careful use of questioning to lead the child to the correct response. The second strategy also used a trained paraprofessional in one to one daily sessions, but

the instructional technique was extrememly flexible. The primary objective was personality adjustment and general cognitive development via the use of a broad range of materials designed to provide the child with stimulation and multiple learning experiences. The study employed a pretest and posttest design, with changes in IQ as the major dependent variable. Results showed significantly greater gains for the structured tutorial group.

A large part of the literature on individualized instruction in early childhood has been generated from the open classroom approach. Although empirical investigations of the open classroom are scarce, this literature does provide a number of suggestions for providing individualization during early childhood. In the open classrooms, the emphasis is on individual interests and styles of learning and on informal verbal interaction. In addition, fascinating concrete materials are provided, as well as a teacher who stimulates and frequently observes the pupils. Experts on the open classroom recognize the variety in speed and style of learning among children and therefore insist that the environment be organized with a variety of materials appropriate for children functioning at many levels. The open classroom environment is discussed in many book-length studies; among them are *Open Learning in Early Childhood* by Barbara Day (1975) and *Informal Teaching in the Open Classroom* by Virgil M. Howes (1974).

DIRECTIONS FOR PRACTICAL PROGRAMING

A teacher can individualize almost any educational task using a number of vehicles of instruction; however, the authors' experience with young children suggests a general process to follow in designing an individualized approach:

1. Gather diagnostic information on the child's present level of educational performance.
2. On the basis of that diagnostic information, establish instructional objectives. These objectives should be specific, observable, and measurable.
3. Determine a performance criterion that specifies the performance level of the learner as well as how that performance is to be demonstrated.
4. Provide learning alternatives; that is, offer a variety of activities for learning the instructional objective and allow the child to choose those that are interesting and challenging.
5. In order to individualize instruction it is absolutely necessary to assess the progress of each learner; therefore, an evaluative measure must be designed for each instructional objective in which the child demonstrates mastery of the instructional objective using different materials or using the same materials in a different setting or with a different adult.

6. Devise a system to record the progress of each learner (evaluation forms, progress charts, individual folders).
7. Provide activities that help the child to reinforce and extend the behavior described in the instructional objective.
8. Retest the child at a later time to be certain that the essential skill formulated by the instructional objective is still part of the child's repertoire.

In addition to the process just described, successful individualized programs for preschoolers are characterized by the following:

1. An individualized instructional program should be developed with the aid of a multidisciplinary team in preplanning sessions.
2. An individualized instructional objective should represent an intermediate step between a child's present level of performance and a desired level of performance.
3. Any individualized instructional objective should include a statement describing the related services of other professional personnel required to meet the objective.
4. To make individualized instruction work, teachers must be receptive and dedicated to the idea of individual development and its allied concepts.
5. Teachers must recognize individual differences among learners and respect the individuality of each child.
6. Teachers must be willing to use a variety of instructional assess-

An individualized education program requires input from a multidisciplinary staff as well as from parents.

ments, including criterion referenced and mastery learning. Individualized education will mean a deemphasis on the use of standardized tests.

7. Teachers must be willing to use a number of vehicles of instruction to teach a given objective. These might include teaching to the individual in a group setting as well as on a one to one basis using a variety of materials.
8. Teachers must recognize that instructional materials are relevant to attaining instructional objectives and that for some objectives materials are the most important variable.
9. Teachers should learn to rely on the services of paraprofessionals, which enables them to give more time to individualized instruction.
10. The school system must provide teachers with time to preplan instructional alternatives and to evaluate their effectiveness.
11. The school system must also provide teachers with time during the working day to share ideas and the results of their instructional endeavors with other teachers and ancillary personnel.
12. The school system must provide opportunities for teachers to enhance their skills for individualizing instruction through in-service education.
13. There should be harmony between the expectations of parents and teachers concerning instructional goals.
14. The school and the teacher must elicit community support to undertake the innovative instructional programs necessary to fulfill the needs of the individual learner. It should be recognized that the community may be reluctant to support radical changes, and plans should be made to educate the community concerning the importance of individualized instruction.
15. Teachers must recognize that individualized instruction may require more time than group instruction. Thus, the daily schedule, although flexible, should be carefully planned. It is not always possible to teach each child everything the teacher would like the child to learn, and it is therefore recommended that individualized instructional objectives be ranked according to the following hierarchy:
    a. *Remedial objectives:* These include instructional objectives that are essential to eliminating the child's learning deficiencies.
    b. *Normalizing objectives:* These objectives constitute material judged appropriate to normally functioning preschoolers. It is, of course, desirable that handicapped preschoolers eventually achieve these objectives; however, that is not always possible. These objectives are therefore of secondary importance to the remedial objectives.
    c. *Enrichment objectives:* These are instructional objectives that are valuable but not essential to a preschool education. They have the last priority for the handicapped child and fre-

quently can be used only with normally functioning or mildly impaired children.

16. Individualized instructional objectives for young gifted children with handicaps must reflect their talents, handicaps, and general development. Accordingly, ongoing instructional objectives in these three areas must be maintained.

REFERENCES

Atkinson, R. C. Computer-based instruction in initial reading. *Proceedings of the 1967 Invitational Conference on Testing Problems.* Princeton NJ: Educational Testing Service, 1968.

Atkinson, R. C., & Wilson, H. A. (Eds.). *Computer-assisted instruction: A book of readings.* New York: Academic Press, 1969.

Besvinick, S. L., & Crittenden, J. The effectiveness of a nongraded school. *School and Society*, 1968, *96*, 181-184.

Bishop, L. K., *Individualizing educational systems.* New York: Harper & Row, 1971.

Blank, M., Koltuv, M., & Wood, M. Individual teaching for disadvantaged children: A comparison of two methods. *Journal of Special Education*, 1972, *6*, (3).

Bosco, J., Harring, R., & Bandy, R. Management systems for individualized instruction: An analysis of five approaches. *Education*, 1976, *96*, (3), 251-261.

Carbone, R. F. A comparison of graded and nongraded elementary schools. *Elementary School Journal*, 1961, *62*, 83.

Day, B. *Open learning in early childhood.* New York: Macmillan, 1975.

Devault, M. V., Kriewall, T. E., Buchanan, A. E., & Quilling, M. R. *Teachers manual: Computer management for individualized instruction in mathematics and reading.* Unpublished manuscript, Research and Development, Center for Cognitive Learning, University of Wisconsin, Madison, 1969.

Druker, S. Master's studies of individualized reading. *Elementary English*, 1963, *40*, 282.

Dunn, R. S. Individualizing instruction: The rationale and five alternative methods. *The Delta Kappa Gamma Bulletin*, 1973, *60*, 9-16.

Flanagan, J. C. Functional education for the seventies. *Phi Delta Kappan*, 1967, *49*, 27-32.

Flanagan, J. C. Program for learning in accordance with needs. *Psychology in the Schools*, 1969, *6*, 133-136.

Glaser, R. Adapting the elementary school curriculum to individual performance. *Proceedings of the 1967 Invitational Conference on Testing Problems.* Princeton NJ: Educational Testing Service, 1968.

Glaser, R. Evaluation of instruction and changing educational models. In M. C. Wittrock & D.E. Wiley (Eds.) *The evaluation of instruction.* New York: Holt, Rinehart & Winston, 1970.

Glaser, R., & Cooley, W. W. Instrumentation for teaching and instructional management. In R. M. W. Travers (Ed.), *Second handbook of research on teaching.* Chicago: Rand McNally, 1973.

Halliwell, J. W. Comparison of pupil achievement in graded and nongraded primary classrooms. *The Journal of Experimental Education*, 1963, *32*, 62.

Hambleton, R. Decision-making in instructional programs. *Review of Educational Research*, 1974, 44, (4), 371-400.

Heathers, G. Education to meet psychological requirements for living in the future. *Journal of Teacher Education*, 1975, 26, 6-11.

Hilson, M., et al. A controlled experiment evaluating the effects of a nongraded organization on pupil achievement. *The Journal of Educational Research*, 1964, 57, 548-550.

Howes, V. M. *Informal teaching in the open classroom*. New York: Macmillan, 1974.

Joyce, B. R. Learning strategies for learning centers. *Educational Leadership*, 1975, 32, 388-391.

Karnes, M. B., Hodgins, A. S., Stoneburner, R. L., Studley, W. M., & Teska, J. A. Effects of a highly structured program of language development on intellectual functioning and psycholinguistic development of culturally disadvantaged three-year olds. *Journal of Special Education*, 1968, 2, 405-412.

Koontz, W. F. A study of achievement as a function of homogeneous grouping. *The Journal of Experimental Education*, 1961, 30, 249-253.

Malan, R. F., & Merrill, M. D. Acronyms anonymous: Toward a framework for the empirical validation of methods of individualizing instruction. *Educational Technology*, 1971, 11, (12), 32-36.

Public Law 94-142. *Education for All Handicapped Children Act*, November 29, 1975.

Rollins, G. W. *History of the development of the continuous English program at Brigham Young University Laboratory School, 1960-1967*. Master's Field Project, Brigham Young University, Provo, Utah, 1967.

Shapski, O. R. Investigation of the use of individualized instruction to teach reading with second and third grade pupils. *Journal of Experimental Psychology*, 1960, 41, (4), 231-237.

Spollen, J. C., & Ballif, B. L. Effectiveness of individualized instruction for kindergarten children with a developmental lag. *Exceptional Children*, 1971, 38, 205-209.

Stahl, D. K., & Anzalone, P. M. *Individualized teaching in elementary schools*. New York: Parker, 1970.

Suppes, P. The uses of computers in education. *Scientific American*, 1966, 215, 206-221.

Webb, L. L. *Selected transitional effects for students transferring from a continuous progress program to a noncontinuous progress program*. Unpublished doctoral dissertation, Brigham Young University, Provo, Utah, 1969.

8 Emphasis on Language

Although language objectives have long been considered important by early childhood educators (e.g., Montessori, 1914), only recently has an intense interest in understanding and enhancing the young child's language emerged. Indeed, if a single area of development can be cited as the principal focus of programing in early childhood education over the past 10 years, it is language development. The past decade has witnessed a genuine preoccupation among linguists, psychologists, and educators with the structure, sound, and meaning of the preschool child's speech. Theoretical and empirical research have addressed such wide ranging topics as language acquisition (e.g., Ruder, Bricker, & Ruder, 1975), development (e.g., Dale, 1976), structure (e.g., Chomsky, 1965, 1972), and intervention (e.g., Karnes, 1969).

Although the principal target of this widespread concern with language has been the so-called disadvantaged child, many of the techniques have been successfully applied to the education of mildly and moderately handicapped young children (e.g., Karnes, 1973). Beginning in the mid 1960's and extending into the present, the field of early education has been conducting what Ellis Evans (1975) termed "a romance with language."

REVIEW OF THE LITERATURE

There are many reasons why the language component of preschool programs for low income and handicapped children is of critical importance. First, the primary means by which social and interpersonal relationships are established and maintained is through the use of language. Young handicapped children often experience disruptions in the ability to understand and express language which, if uncorrected, impair their social relationships and emotional interactions with peers and adults. Secondly, language constitutes the

major vehicle of instruction during the early school years. The handicapped child who experiences problems in comprehending others or in self expression will have difficulty developing the concepts that serve as the basis for later academic skills. A third and very important reason for early language programing concerns the optimal period for language development. Although definitions of the critical period for language learning are disputed, many developmental experts (e.g., Lenneberg, 1967; McNeill, 1970) agree that the preschool years constitute the optimal time for acquiring language and remediating language disabilities. Finally, while the preschool years are normally the prime time for children to acquire language on their own, many children with language disabilities lack the strategies to do so and may fixate at an early developmental level (e.g., Menyuk, 1964, 1969, 1974). Thus, the gap between the language delayed child and his or her peers widens rather than closes with age.

For these and other reasons, techniques to identify language delayed children early and to provide remediation are perhaps the most significant in the preschool teacher's repertoire. The purpose of this chapter is to offer professionals who work with young children an organized review of the research as it relates to the following questions: What does research suggest concerning the effectiveness of a structured approach in enhancing the language development of disadvantaged and handicapped preschoolers? What are the research implications concerning teaching strategies to enhance language development?

Effectiveness of a Structured Approach to Language Development

The results of several studies scattered throughout the early education literature strongly support the effectiveness of structured language programs in enhancing language development among low income and handicapped preschoolers. One important methodology of this research has been to compare and evaluate alternate approaches to preschool education. Beginning in the mid 1960's, the federal government lent support to a number of such studies in which one of the comparative variables was, of course, language development. In several studies a more structured approach was compared to a less structured approach (e.g., Karnes, 1969); generally, the more structured programs proved to be more effective in raising scores on tests of intelligence and language development.

A typical study along these lines was conducted by Karnes (1969), who compared a less structured, traditional research program with her own highly structured, cognitive-ameliorative approach. The curriculum was designed to develop, among other skills, basic language processes. The daily schedule included three, small group, 20 minute learning periods, which emphasized verbalizations in conjunction with the manipulation of concrete materials. Language con-

cepts taught during these structured periods were reinforced during periods of directed play. If a child was unable to make verbal responses freely, the teacher supplied an appropriate model. In addition, when a child began to initiate appropriate verbal responses, the teacher often helped to modify or expand the child's efforts. Karnes reported superior gains on intelligence and language measures by children in the structured program over those of children in the traditional program.

Similar results favoring a structured approach were reported by Herman and Adkins (1970), who compared the effects of a traditional preschool curriculum with those of the University of Hawaii Preschool Language Curriculum, which directly teaches the use of labels, verbs, plurals, tenses, pronouns, and adjectives. The major result of the study was the significantly superior performance of children enrolled in the language curriculum on eight Illinois Test of Psycholinguistic Abilities (ITPA) subtests, including verbal expression and auditory association.

In a study comparing three Mexican American and Black Head Start groups that participated either in two different and very specific daily language lesson sequences or in song-game sessions, Edwards and Stearn (1969) reported significantly superior results for the two language supplement groups on the preschool inventory and on several subtests of a curriculum related UCLA language battery. The experimental children who participated in language sequences received daily 15 minute lessons in which language responses were used to solve problems and perform other intellectual tasks as well as simple color and number labeling.

Clasen, Spear, & Tamaro (1969) compared disadvantaged preschoolers enrolled in a short term, highly structured program emphasizing language development with children enrolled in a traditional program. They found that children who received intensive language training exhibited significantly superior linguistic performance as measured by the ITPA. Unlike many other programs, however, no significant IQ differences were found between groups.

Dickie (1968) conducted an experiment in which disadvantaged Black children enrolled in the Henry Horner Preschool Center were assigned to four matched groups. Two groups were structured, one using the Bereiter-Englemann program and the other the Gotkins Programmed Language Training Materials; two groups were unstructured, with children attending a traditional preschool. Language training was conducted in the structured program for 20 minute periods. Results showed significant gains for children enrolled in the structured program over those in the unstructured program on all language measures, including the expressive vocabulary inventory, the Children's Auditory Discrimination Inventory, and the Auditory-Vocal Association Subtest of the ITPA. No significant differences were observed between subjects in the two structured groups.

Other preschool programs employing a structured approach with

a heavy emphasis on language development and reporting strong improvements in the intellectual and linguistic abilities of their subjects include Blank and and Solomon (1968, 1969), DiLorenzo and colleagues (1969), Karnes (1969), and Karnes, Teska, Hodgins, and Badger (1970). Thus, on the basis of numerous studies, there appears to be a clear empirical mandate supporting the use of a systematic structured approach to enhancing language development with disadvantaged and handicapped preschoolers.

Teaching Strategies and Language Development

Although evidence is scarce concerning the effectiveness of various teaching strategies, the results of a few studies offer at least a partial guide to the teacher who is seeking ways to foster language development among young handicapped children.

One such study is Moore (1971). Moore compared two preschool language curricula designed to help disabled Black children describe selected materials and pictures more fully. The two programs were similar in that each day specific target language concepts were chosen as the focus of instruction (e.g., categorizing materials), and both employed the use of a wide variety of concrete materials. The programs differed, however, in the nature of adult-child interaction. In the approach called *patterning*, the adult attempted to elicit descriptions from the child through questioning; on occasion, the adult modeled appropriate verbal responses and even asked the child to repeat the more accurate model. In the *extension* approach, the adult responded to the child's verbalizations about materials and in so doing modeled the particular language concept that was the focus of instruction. Three adult tutors talked with the children 25 minutes daily for 3 months. Results showed that the patterning approach was more effective in raising scores on the Weschler Preschool and Primary Scale of Intelligence; it was also more effective in improving the complexity and accuracy of the children's descriptions of realistic pictures.

In another study, Smothergill, Olson, and Moore (1971) compared the effects of two styles of teacher-child interaction on the language and problem solving skills of 24 low income nursery school children. Children were randomly assigned to two groups for 17 days. In each group the children were exposed to a 20 minute small group session with a teacher-child ratio of one to six. With one group of 12 children, teachers elaborated their own language and deliberately elicited verbal feedback from the children. In the other group, teachers maintained an elaborative style of interaction, but verbalizations from children were not elicited. The groups were carefully monitored to make sure that the style of interaction did in fact differ in the stipulated ways and to obtain records of children's language during the sessions. Analysis of verbalizations showed that children taught via the elaborative style that elicited feedback showed a

greater frequency of elaborated statements, that is, statements that conveyed more than the minimum information required for a task.

In an often cited study, Cazden (1965) compared the effectiveness of two commonly used techniques for talking with children: *expansion*, in which the child's statements are expanded into longer, more elaborated sentences by the adult, and *modeling*, in which the adult responds to a child's verbalization with a well formed sentence (e.g., Child: "I got oranges." Adult: "Do you like them?"). A control group, which received no special intervention, was also included in the study. Subjects were 12 Black children ranging in age from 28 to 38 months. Several measures of language development were obtained using a pretest-posttest design. There were no statistically significant results between the expansion and modeling groups, although a trend favored the modeling group. Both the expansion and modeling groups made gains significantly superior to those of the control group.

A few writers have provided strong evidence that preschool teachers must play an active role in the development of language. Monaghan (1971), for instance, conducted a study with nursery school children in order to assess verbal contacts between teachers and children. Monaghan recorded which children initiated conversations and then compared that list to the list of children with whom teachers most frequently initiated conversations. Those children who initiated conversations were most frequently sought out by their teachers. These results suggest that teachers are a powerful source of reinforcement for child initiated conversations but that teachers must make a conscious effort to engage *all* children in the class in verbal interactions.

The importance of teacher engagement is underscored by Talbert (1968), who studied children in a predominantly Black kindergarten. Talbert found that those children who started out on the periphery of teacher attention and teacher-led activities became more isolated as the year went on. These findings again emphasize that teachers must actively seek out and engage in verbal interaction *all* children in the classroom.

What can be concluded about the most effective strategies for enhancing language development? First, it must be recognized that many more studies in this area are needed. However, on the basis of the review of related literature and of the practical experience of the authors, the following points merit consideration:

1. The teacher must actively engage *all* the children in the classroom in conversation (e.g., Monaghan, 1971, Talbert, 1968).
2. When the teacher elicits verbal information through the careful use of questioning and models appropriate verbal responses, the child's verbal descriptions tend to improve in complexity and accuracy.
3. When the teacher elaborates on the child's verbalizations and

elicits verbal feedback, the child tends to make elaborated statements with greater frequency.

DIRECTIONS FOR PRACTICAL PROGRAMING

The experience of the authors, in particular the work of the senior author in developing language based programs for young handicapped children, suggests that the following conditions contribute to effective language programing with young children:

1. Since language is at the very heart of learning, every program for young handicapped children must emphasize language.
2. Child assessment must include a means of determining the child's developmental stage in language. Only when the teacher is aware of the child's language strengths and weaknesses can she or he provide a program that will ensure the child's continued progress in areas of strength and provide remediation in areas of weakness.
3. Half-day programs should devote at least 20 to 25 minutes daily to language development. During these periods teachers become aware of the individual child's specific needs in this important area. If the program extends for a full day, a second language period should be added. Regardless of the number of structured language periods, however, language development must be stressed throughout the day. The teacher needs to formulate a mental blueprint of the language needs of each child

Language is at the heart of learning and, thus, must be emphasized in programing.

and take advantage of every opportunity to promote the acquisition of language skills.

4. Parents and other family members through conferences, observation at school, and reading and training workshops conducted by professionals should become aware of the critical importance of language in the child's total intellectual, social-emotional, academic, and motor development. Together the school and home can enhance language development; most certainly, the home can reinforce and extend the language curriculum offered the child in the school.
5. A language development program should selectively focus on those psycholinguistic areas that appear most relevant to success in school.
6. An effective language development program should follow a systematic process, characterized not only by daily instruction but also by instruction that follows a carefully sequenced set of instructional objectives.
7. One effective means for rationalizing, organizing, and implementing a systematic language program is through use of an instructional model such as the ITPA. A theoretical model provides teachers not only with an understanding of the complex processes involved in language but also with a framework for choosing and sequencing instructional activities.
8. Teachers must understand the immediate and long range purposes of each language activity. The authors recommend the use of a lesson plan format that specifies an instructional objective, the necessary materials, a brief description of the instructional procedure, and a criterion activity designed to determine whether the child has achieved the objective. For examples of well structured language activities, the reader is referred to the Goal Language Development Program (Karnes, 1972).
9. It is important for teachers to promote language development by eliciting the child's language in as many situations as possible throughout the preschool day. This includes asking children to describe items, to ask questions or tell stories, and to interact verbally during appropriate times such as free play, snack, or music times.
10. Teachers must create an atmosphere in which children will feel comfortable in talking. This environment can be promoted by praising children for attempts to describe things or ask questions and by teaching children to attend to their peers.
11. Teacher response to a child's verbal efforts will increase the child's attempts to talk. As the child becomes more skillful at vocalizing, the teacher can become more selective in choosing which vocalizations to reinforce.
12. When a child uses telegraphic speech (e.g., "car go"), the teacher should repeat the thought in a complete sentence (e.g., "Yes, see the car go."). Similarly, if a child uses incorrect

grammar, the teacher should simply say the sentence correctly.

13. The teacher should expand the child's vocabulary by gradually adding new words and phrases. One technique the authors have found to be effective is to introduce a new word every day in a game-like atmosphere. When a child expresses a thought, the teacher can expand upon this thought by providing new information.
14. Language programs that are commercially available and have been tested on a research basis can be adapted and modified to meet the needs of individual children with handicaps. Teachers should seek out such programs and use them when appropriate.
15. Children who manifest marked problems in language should be seen by a speech and language therapist. The teacher, specialist, and parents should coordinate their efforts.
16. Every preschool teacher should have a course on language development, preferably prior to but certainly concurrent with teaching young handicapped children, since a large percentage of handicapped children have delays or deficits in language development. A portion of the inservice training of teachers should provide opportunities for them to enhance their understanding of language development and ways of fostering the language development of young children.
17. Programs that bring about the largest gains among young children are those in which the teacher deliberately teaches language skills. Thus, teacher directed language lessons or activities are more likely to ensure growth in language than informal settings in which language development is more or less left to choice and circumstance.
18. Paraprofessionals or teacher aides can be trained to promote language development; indeed, their charges may score as high on language tests as children taught by professionals. Teacher aides who are able to promote this level of language development are, of course, closely supervised by highly qualified professionals.

REFERENCES

Blank, M., & Solomon, F. A tutorial language program to develop abstract thinking in socially disadvantaged preschool children. *Child Development*, 1968, 39, 379-390.

Blank, M., & Solomon, F. How shall the disadvantaged child be taught? *Child Development*, 1969, 40, 47-61.

Cazden, C. *Environmental assistance to the child's acquisition of grammar*. Unpublished doctoral dissertation, Graduate School of Education, Harvard University, 1965.

Chomsky, N. *Aspects of the theory of syntax*. Cambridge: Massachusetts Institute of Technology Press, 1965.

Chomsky, N. *Language and mind* (2nd ed.). New York: Harcourt, 1972.

Clasen, R. E., Spear, J., & Tamaro, M. P. Comparison of a highly structured and traditional approach. *Education Research*, 1969, 62 (2), 401-405.

Dale, P. S. *Language development: Structure and function* (2nd ed.). New York: Holt, Rinehart & Winston, 1976.

Dickie, J. Effectiveness of structured and unstructured (traditional) methods of language training. *Monographs of the Society for Research in Child Development*, 1958, 33.

DiLorenzo, L., et al. *Pre-kindergarten programs for educationally disadvantaged children* (Final report, Project No. 3040, US Office of Education). Albany: New York State Education Department, Office of Research and Evaluation, 1969.

Edwards, J., & Stearn, C. A comparison of three intervention programs with disadvantaged preschool children. *Head Start research and evaluation center final report 1968-1969* (Office of Economic Opportunity, Office of Education, US Department of Health, Education, and Welfare). Los Angeles: University of California, 1969.

Evans, E. D. *Contemporary influences in early childhood education* (2nd ed.). New York: Holt, Rinehart & Winston, 1975.

Herman, H., & Adkins, D. C. *Final report: Head Start evaluation 1968-69*. Honolulu: Head Start Evaluation and Research Center, University of Hawaii, 1970.

Karnes, M. B. *Investigations of classroom and at-home interventions: Research and development program on preschool disadvantaged children. Final Report* (Contract No. 5-1181, Bureau of Research, Office of Education, US Department of Health, Education, and Welfare). Bethesda MD: ERIC Document Reproduction Service, 1969. (ED 036 663)

Karnes, M. B. (Developer). *GOAL: Language Development* (Game Oriented Activities for Learning). Springfield MA: Milton Bradley, 1972.

Karnes, M. B. Evaluation and implications of research with young handicapped and low-income children. In J. C. Stanley (Ed.), *Compensatory education for children ages two to eight*. Baltimore: The Johns Hopkins University Press, 1973.

Karnes, M. B., Teska, J. A., Hodgins, A. S., & Badger, E. D. Educational intervention at home by mothers of disadvantaged infants. *Child Development*, 1970, 41, 925-935.

Lenneberg, E. H. *Biological foundations of language*. New York: Wiley, 1967.

McNeill, D. *The acquisition of language: The study of developmental psycholinguistics*. New York: Harper & Row, 1970.

Menyuk, P. Comparison of the grammar of children with functionally deviant and normal speech. *Journal of Speech Hearing Research*, 1964, 7, 109.

Menyuk, P. *Sentences children use*. Cambridge: Massachusetts Institute of Technology Press, 1969.

Menyuk, P. *Linguistics and evaluating the language disorders of children*. Paper presented at the Annual Convention of the American Speech and Hearing Association, Chicago, 1974.

Monaghan, A. C. *Children's contacts: Some preliminary findings*. Unpublished manuscript, Harvard Graduate School of Education, 1971.

Montessori, M. *Dr. Montessori's own handbook*. New York: Frederick A. Stokes, 1914.

Moore, D. A. *A comparison of two methods of teaching specific language skills to lower class preschool children*. Unpublished doctoral dissertation, Harvard University, 1971.

Ruder, K., Bricker, W. A., & Ruder, C. Language acquisition. In J. J. Gallagher

(Ed.). *The application of child development research to exceptional children*. Reston VA: The Council for Exceptional Children, 1975.

Smothergill, N. L., Olson, F., & Moore, S. C. The effects of manipulation of teacher communication style in the preschool. *Child Development*, 1971, 42, 1229-1239.

Talbert, C. S. *Interaction and adaptation in a Negro kindergarten*. Paper presented at the meeting of the American Anthropological Association, Seattle, November 1968.

9 The Role of Paraprofessionals

Teaching the young child is always a complex and time consuming effort. In other sections of this monograph, the importance of such time consuming work tactics as individualized instruction and detailed record keeping has been suggested. For many teachers, it must seem that professional life quickly fills itself with a constant tug-of-war between the rigors of the classroom and the demands of planning and evaluation. In order to meet these demands, the preschool teacher must learn to orchestrate the available resources, and one of the most important of these can be the paraprofessional aide. Used skillfully, the classroom aide can make a significant contribution to the daily operation of the preschool by assisting in instruction and by performing ancillary duties.

REVIEW OF THE LITERATURE

There is a paucity of research on paraprofessionals. The only question that can be answered on a research basis is: What does the research say about the effectiveness of paraprofessionals as teachers?

Many teachers are skeptical about allowing paraprofessionals to instruct children, yet preliminary evidence suggests that this skepticism is unwarranted. At least two studies (Karnes, Zehrbach, & Teska, 1971; Schortinghuis & Frohman, 1974) provide dramatic evidence of the effectiveness of paraprofessionals as teachers.

In the first study—actually a series of studies—Karnes, Zehrbach, and Teska (1971) conducted empirical investigations which demonstrated that children taught by paraprofessionals made significant gains on standardized measures that did not differ from those made by children taught by professional teachers under similar conditions. In this study, preschoolers taught by professionals attained a mean Standford-Binet IQ gain of 14.3 during a 1 year period; chil-

dren taught by adult parateachers made a mean gain of 12.5; and children taught by 16 and 17 year old girls in a work-study program gained 14.4 IQ points.

In another study, Karnes and her associates (1970) engaged teenagers under the careful supervision of cooperating teachers to select and write lesson plans for their younger siblings. At the end of a 6 week session the 11 children who served as subjects made a mean IQ gain of 6.7, which was significant at the .05 level.

In a second major study, Schortinghuis and Frohman (1974) compared the effectiveness of paraprofessional teachers and professional teachers with parents and children enrolled in the Portage Project, a home based program serving handicapped youngsters and their parents in rural areas. Two groups were compared in the study. In one group 21 children and their parents were served by paraprofessionals well trained in the precision teaching, data based Portage approach. In the second group professional teachers, also trained in the Portage approach, provided comparable services to 16 children and their parents. Results showed that paraprofessionals were as effective in teaching communication skills and more effective in teaching academic skills.

As these studies illustrate, well trained paraprofessionals can be effective teachers of young children. However much more research in this area is needed.

INSIGHTS ON PARAPROFESSIONAL TRAINING BASED ON OBSERVATIONS AND EXPERIENCE IN THE FIELD

Although little research has been done to evaluate the use of paraprofessionals in classrooms that include handicapped preschoolers, observations in the field seem to suggest that teachers can and do make effective use of aides in a wide range of activities. The following discussion, then, derives not from research evidence but from the experiences of the senior author over a period of years as the director of a preschool for handicapped children in a university setting and as an observer/evaluator in dozens of projects throughout the country.

These suggestions for practical programing are organized around four basic questions: Why are paraprofessionals important to the preschool teacher? How can a teacher establish a paraprofessional program? What qualifications do paraprofessionals need? What duties can paraprofessionals perform in the preschool classroom?

Importance of Paraprofessionals to the Preschool Teacher

A number of factors make the employment of paraprofessionals important to the successful operation of a preschool. First of all, the hiring of paraprofessionals reduces the number of nonprofessional tasks required of teachers and allows them to concentrate their energies on the tasks most closely related to instruction and evaluation.

Secondly, the employment of paraprofessionals lowers the pupil-adult ratio, which in turn permits more frequent interactions between adults and children, especially feedback to the child by adults, which is so important to effective instruction. Thirdly, employing paraprofessionals facilitates individualization of instruction and personalization of learning. Finally, paraprofessionals can often provide children from culturally different backgrounds and lower socioeconomic levels with more appropriate and relevant adult models.

Establishing a Paraprofessional Program

There are a number of important steps that the preschool teacher can take to establish an effective paraprofessional program.

The professional staff of the school, especially the teacher, should formulate the particular needs of a given classroom. A precise statement of the services to be performed by the paraprofessional is necessary to determine qualifications for the job and to provide applicants with a description of responsibilities.

Persons suited for the position must be identified. This task can be approached in a number of ways. The teacher can survey the skills of parents of children in the class. Service organizations such as fraternal and professional groups or high schools and junior colleges may be consulted for the names of prospective applicants. Fliers can be used to distribute information about the position throughout the community.

The skills of the job applicant must be matched with the needs of a given classroom. The teacher should carefully explain what the job entails and ask if the prospective applicant feels comfortable performing these types of tasks. In addition, a trial period in which the teacher carefully observes the paraprofessional working with young children is extremely helpful in determining if the match is satisfactory to the applicant and the teacher.

Orientation and preparation sessions between the paraprofessional and the teacher are essential. Ideally, these sessions should be held at least a week before school begins to acquaint the aide with the goals of the classroom, the operation of special equipment, and the nature of the aide's duties.

Ongoing training and feedback must be provided to the paraprofessional at regular intervals throughout the school year. Teachers and administrators should evaluate the aide's performance in the classroom and share these evaluations with the aide. These sessions also provide an opportunity for the aide to ask questions and share opinions.

Trained paraprofessionals should be asked to share their experience with the community. A successful paraprofessional can do much for public relations and can assure program continuity by helping to recruit other ideas.

Necessary Qualifications for Paraprofessionals

Most adult members of the community who have a high school education and are interested in the position can serve as paraprofessional aides in the preschool, but the following personal and social characteristics merit consideration:

1. A warm, understanding, and enthusiastic personality.
2. Dependability.
3. Willingness to abide by the rules of the school and classroom and to work under the supervision of a classroom teacher.
4. Desire to learn and a capacity for growth.
5. Ability to respect the confidentiality of information.
6. Willingness to work will all cultural and social groups, whether composed of children or adults.
7. Willingness to take part in inservice activities.
8. Adaptability and flexibility to cope with a wide variety of situations.
9. Understanding of and knowledge about the surrounding community.
10. Desire to work with children and the capacity to respect them as individuals.

Duties of Paraprofessionals

The specific responsibilities of the paraprofessional will, of course, vary from situation to situation. However, the authors' experiences in training paraprofessionals and observing them at work in other classroom settings suggest that the following tasks are appropriate for most paraprofessional aides:

1. Assisting with equipment or supplies needed in the classroom (e.g., toys, audiovisual materials, books, curriculum supplies) by checking them out and returning them and by setting up the materials for use in the classroom.
2. Helping to create and maintain an environment conducive to learning by attending to such matters as regulating the temperature, adjusting lighting, performing various housekeeping chores, arranging room decorations, cleaning up after art activities, and preparing the room for the next day's instruction.
3. Handling minor emergencies such as first aid for minor injuries, torn clothing, wetting accidents.
4. Supervising art activities, especially finger and easel painting, clay modeling, and the like.
5. Supervising directed play both indoors and out.
6. Assisting with field trips by helping to arrange them and by supervising children during them.
7. Telling or reading stories.
8. Leading music time.

9. Assuming responsibility for lavatory periods and snack time.
10. Handling carefully supervised small group activities.
11. Taking daily attendance and distributing memos and bulletins.
12. Aiding with discipline and class control.
13. Providing anecdotal information about children, including social interactions, learning behavior, and health problems, which can aid the teacher in planning for individualized instruction.

DIRECTIONS FOR PRACTICAL PROGRAMING

A review of research and the experiences of the authors suggest directions for practice in the use of paraprofessionals:

1. A high adult-child ratio is essential in an exemplary program for young handicapped children and can be achieved at a relatively modest cost by employing paraprofessionals.
2. Administrators and/or parents need not be concerned that the use of paraprofessionals jeopardizes the learning of the handicapped child. The progress of children taught by paraprofessionals under the supervision of highly qualified professionals can be comparable to that of children taught only by professionals.
3. Criteria must be developed for selecting paraprofessionals who serve as teachers. Such criteria should, of course, serve as guides rather than as absolutes.
4. The teacher who will supervise the paraprofessional should participate in the hiring procedures along with other members of the staff.
5. Training concurrent with working in the classroom is essential for paraprofessionals. The teacher usually assumes the major responsibility for this training.
6. Paraprofessionals should not be viewed by administrators or teachers as replacements for professionally trained teachers. Rather, paraprofessionals extend the expertise of the teachers, particularly in providing individualized instruction.
7. To ensure the growth and enthusiasm of the paraprofessional, the teacher must supply positive feedback that is reinforcing to the paraprofessional and encourages greater effort.
8. Continuous assessment of the paraprofessional is essential for providing quality inservice training, especially if the teacher is to convey to the paraprofessional his or her strengths and provide help in eliminating weaknesses. The progress of the paraprofessional should be evaluated cooperatively by the supervising teacher and the paraprofessional.
9. Children should have the opportunity to interact with adults of both sexes. Therefore, if the head teacher is a female, consideration should be given to the employment of a male paraprofessional, but only if he is among the well qualified candidates for the position.

10. Observing the teacher is helpful to the paraprofessional in acquiring teaching skills, and provisions should be made for such observations. Similarly, it is helpful for the paraprofessional to observe the teacher in interactions with parents.
11. Paraprofessionals should actively participate in case conferences and share their own anecdotal records and observations. Paraprofessionals can also learn to chart child progress and write progress reports.
12. Paraprofessionals are expected to maintain the same professional ethics as teachers, therefore, information on a child that is available to the teacher should usually be available to the paraprofessional.
13. Teachers and administrators should recognize that paraprofessionals working in classrooms with gifted handicapped children will need special training designed to enhance their skills to foster development of talents as well as remediate the handicaps of the children.

REFERENCES

Karnes, M. B., Teska, J. A., & Hodgins, A. S. The successful implementation of a highly specific preschool instructional program by paraprofessional teachers. *Journal of Special Education*, 1970, 4, 69-80.

Karnes, M. B., Zehrbach, R. R., & Teska, J. A. A new professional role in early childhood education. *Interchange*, 1971, 2 (2), 89-105.

Schortinghuis, N. E., & Frohman, A. A comparison of paraprofessional and professional success with preschool children. *Journal of Learning Disabilities*, 1974, 7 (4), 245-247.

10 Promoting Generalization of Learnings

The importance of generalization, or transfer of training as it is frequently called, has long been recognized by psychologists and educators. Without generalization, of course, gains made in a classroom or in a treatment setting are of limited value. It may be an achievement to eliminate socially deviant behavior or to effect dramatic gains on cognitive tasks, but the significance is minor if the behaviors fail to carry across time, settings, and persons.

Despite the recognized need for developing procedures to enhance generalization, little systematic research in applied settings (e.g., schools, clinics, hospitals) has been carried out, and a number of authors have lamented this fact (Marholin, Siegel, & Phillips, 1975; Rincover & Koegel, 1975). The observation of Marholin, Siegel, and Phillips is typical: "Few programs have been designed specifically to obtain or systematically study transfer of treatment effects" (p. 2).

A number of hypotheses have been advanced to explain why programs neglect to teach explicitly for generalization. Stokes and Baer (in press) pointed out that most educators tend to view generalization as "something that happened. As something that was more or less a natural outcome of any teaching process." A second reason for neglecting to include procedures to enhance generalization is that educators felt that the natural environment automatically supported adaptive behavior change. That is, certain behaviors produced consequences that were more likely to be reinforced because they were appropriate (e.g., eating correctly is more appropriate than eating incorrectly and thus more likely to be reinforced.). As Kazdin (1975) put it,

> Specifically natural reinforcers, or those reinforcers that normally follow behavior in every day life are considered suffi-

cient to maintain behavior once behavior is well established. Thus, behaviors should transfer to settings in which no program is in effect because of the consequences which ordinarily are provided. (p. 216)

For individuals functioning normally in society, many behaviors can be said to be maintained by the natural environment. However, for children with handicaps the natural consequences flowing from the environment are not sufficient to promote generalization, primarily because the natural environment does not *systematically* provide consequences to behavior. Typically, appropriate behaviors (both social and academic) go unrewarded because they are expected, but punishment is often applied for failing to behave in desirable ways. As Kazdin (1975) pointed out, "Socially desirable behaviors are expected and their nonoccurrence may result in social censure and additional undesirable consequences" (p. 217).

In the past four years researchers have begun to examine techniques for enhancing generalization with exceptional children in applied settings. Walker and Buckley (1972) noted that "the issue of whether treatment gains produced by behavior modification techniques do in fact generalize and maintain across time and across settings has received increasing attention in the last few years." (p. 209). Most of this research has relied on applied behavior analysis orientation and has been conducted with elementary and high school students or adult clients. Very few studies have involved preschoolers. In addition, most of the results are tentative. As Kazdin (1975) concluded regarding current procedures to enhance generalization, "The results are preliminary because the procedures have not been evaluated extensively. In future projects it will be especially important to conduct long-term follow up studies to determine whether behavior changes are maintained over long periods such as one or two years" (p. 228).

Despite the relatively untested nature of these procedures, they warrant consideration by the classroom teacher for two reasons. First, teachers are searching for techniques to enhance generalization. Early childhood educators especially feel the pressure to produce behavior changes that transfer to subsequent school settings. Although much research is needed and teachers must proceed with caution, at least for the immediate future they can serve as their own judges concerning the effectiveness of these techniques. Second, it may be that procedures to enhance transfer of training are already practiced by most classroom teachers and that an awareness of their importance will lead to the more systematic use of such techniques. Stokes and Baer (in press) optimistically concur,

A technology of generalization programming is almost a reality, despite the fact that until recently it had hardly been recognized as a problem in its own right. Within common teach-

ing practice there is an informal germ of a technology for generalization.

REVIEW OF THE LITERATURE

The research evidence concerning generalization or transfer of training may be grouped into two categories that are particularly useful to classroom teachers. The first presents evidence to answer the question, Will generalization take place without specific programing? The second addresses itself to the question, By what techniques may generalization be enhanced?

Will Generalization Take Place without Specific Programing?

The majority of researchers examining techniques to facilitate generalization in applied settings assert that the best method to assure that specific skills taught to a handicapped child in one setting will transfer to other settings is to program or teach for generalization (Baer, Wolf, & Risley, 1968). Perhaps Stokes and Baer (in press) have put the case most succinctly: "In short, generalization is not seen here as a magical procedure or an explanation of a phenomenon, but a description of a behavior change which must be programmed like any other behavior change."

A number of studies document more specifically the need to program or teach for generalization with exceptional populations. Research involving children with behavior disorders supports the majority conclusion that unprogrammed generalization seldom occurs. Johnson, Bolstad, and Lobitz (1974) considered whether treatment effects applied in the home were generalized to the school where treatment was not implemented. Subjects in this study were 15 children identified by parents and teachers as having "behavior problems." The critical question posed was, "Does behavior modification in the primary setting have any systematic effect on children's behavior in other settings?" (p. 18).

Disruptive behavior decreased only in the home, and high levels of disruptive behavior continued in the school where contingencies were not in effect. The authors concluded:

> The results of the present study are fully consistent with most other work on the generalization question in showing that unprogrammed positive generalization rarely, if ever, occurs. It seems clear from the accumulation of research data that a child should be treated in the research setting where he is having difficulty. There is little reason to expect positive generalization from one setting to the other and children who have difficulty in school and home settings should probably receive simultaneous treatment in both settings. If positive generalization across settings is desired, active programming of such generalization appears to be required. (p. 35)

Wahler (1969) examined how well contingencies imposed in one setting generalized to another with subjects, two boys ages 5 and 8, who displayed very similar deviant behaviors in both home and school settings. The investigators trained the parents to use reinforcement and time-out procedures in the home, and these tactics led to significant decreases in inappropriate behaviors at home. These results did not generalize, however, and inappropriate behavior at school remained at baseline levels (i.e., the level at which target behaviors occurred prior to intervention). Wahler commented on these results:

> The data presented provide no evidence of setting generality, at least as far as home and school environments are concerned. Contingency operations performed in the homes of the two children were followed by predictable changes in the children's behavior within this setting. However, the children's behavior in the school setting was unaffected by these operations. Only when similar contingency operations were performed in the school were behavior changes apparent within this setting. In other words, the settings appeared to be functionally independent with certain qualifications. That is, while home operations were clearly unrelated to child behavior in the school, design problems did not permit an assessment of the influence of school operations on child behavior in the home. However, there is little reason to believe that functional relationships in the school-home direction should be much different than those in the home-school direction. (p. 246)

Meichenbaum, Bowers, and Ross (1968) reported an absence of generalization of behavior changes from an afternoon intervention period to the morning period in a classroom for institutionalized female adolescent offenders. Money dispensed contingent on on-task behaviors effected desired behavior changes during the afternoon, but generalization to the morning session was not reported until the same manipulations were implemented there as well.

Other studies reporting a similar lack of generalization include Ayllon and Azrin (1968); Bushell, Wrobel, and Michaelis (1968); Kazdin and Klock (1973), O'Leary, Becker, Evans, and Sandargas (1969); Redd and Birnbrauer (1969); Reisinger (1972); Risley (1968); and Stokes, Baer, and Jackson (1974).

It should be noted, however, in considering whether or not generalization occurs without specific programing that a body of literature exists that suggests that unprogrammed generalization can occur. Zeilberger, Sampen, and Sloane (1968) found that the physical aggression and noncompliance to instruction of a 4 year old boy was dramatically changed when his mother performed a simple time-out procedure contingent upon the emission of these behaviors. The authors noted a decrease not only in the child's aggressive and disobedient behavior but in his yelling behavior as well. Since the yell-

ing was not an original target response, this change constituted an unprogrammed generalization across behaviors. The authors also noted that the child acted appropriately in the presence of several neighbors and parents:

> Rorey's aggressive and disobedient behaviors were clearly changed by manipulating the consequences of those behaviors. The changes in behavior were readily apparent to all who came in contact with him. Both Rorey's parents and several neighbors commented that Rorey behaved like a different child. (p. 52)

A second study reporting unprogrammed generalization effects was conducted by Lavigueur, Peterson, Sheese, and Peterson (1973), who trained the mother of a 3 year old boy to dispense time-out and differential reinforcement contingent on disruptive behavior at home. The frequency of the child's objectionable behavior varied according to the combined use of differential attention to appropriate behaviors and time-out for inappropriate behavior. Differential attention alone was not effective in altering inappropriate behaviors. The authors also noted similar changes in the inappropriate behaviors of the subject's 5 year old sister even though she was not part of the study and no specific plan had been designed to modify her behavior. Her behavior changes constituted a generalization across persons. Followup observations over a 10 month period revealed that behavior changes were maintained for both subjects. Lavigueur and associates proposed that the girl's behavior changed because of the mother's increased attention toward her daughter's desirable behavior and decreased attention to her undesirable behavior.

Other studies reporting unprogrammed generalization include Bennett and Maley (1973); Berkowitz, Sherry, and Davis (1971); and Kifer, Lewis, Green, and Phillips (1974).

Although there is minor inconsistency in the literature concerning whether unprogrammed generalization will occur, it is very clear that generalization of newly learned behavior is not automatic with exceptional children. Most studies involving exceptional subjects fail to find generalization. It seems clear that the only way for teachers to be certain that behavior change will transfer is to program for such generalization.

Techniques to Enhance Generalization

A number of basic techniques to enhance transfer of training have been proposed in the generalization literature; generally, these techniques are used in conjunction with one another. For example, in a given program the practitioner often begins with one technique and later introduces a second technique to enhance transfer. The following are some techniques that may be used by teachers to help young handicapped children to generalize.

Naturally Occurring Reinforcers and Rewards

A technique frequently used to enhance transfer of training is to bring the exceptional child's behavior under the control of naturally occurring reinforcers. Naturally occurring reinforcing events refer to social reinforcers such as praise and attention as well as to intrinsic reinforcers that follow from the behavior itself as in reading or eating. Many children with handicaps, however, are not able to understand or benefit from naturally occurring rewards alone, and all teachers are familiar with children who do not respond to praise or who fail to find intrinsic rewards in reading. Thus, it is frequently necessary for teachers to provide some children with more powerful, extrinsic reinforcers, such as tokens and candy, and to pair these rewards with praise. Eventually, the tokens can be eliminated and praise alone will control the behavior.

Such a combination of extrinsic and naturally occurring reinforcers was employed by Wahler (1969), who began by having parents praise their children for playing cooperatively in an attempt to reduce obstreperous behavior. Praise alone was not initially effective. Wahler then requested parents to reward appropriate behaviors with points, which could later be exchanged for a favorite toy. Although praise was not effective initially, it became a reinforcer after being paired with points. Eventually, praise alone controlled the children's behavior.

A number of other authors have reported that pairing praise with token or primary reinforcement increases the value of praise and eventually leads to controlling behavior with naturally occurring reinforcers alone (Loeke, 1969; Wahler, 1969). This technique has been shown to be effective with delinquents (Quay & Hunt, 1965); oppositional children (Wahler, 1969); retarded children (Loeke, 1969); and psychotic children (Lovaas et al., 1966).

Bringing behavior under the control of naturally occurring rewards is critical because in most natural environments, including normal classrooms, this is the type of reinforcement that will be most readily available. If the exceptional child can respond to naturally occurring rewards, the chances are increased that behavior already learned will transfer to another setting. It also increases the chances that the child will learn new behaviors in other environments as well.

Evidence to support the view that maintaining behavior with naturally occurring reinforcers is a key variable in achieving transfer is presented by Nolan, Mattis, and Holliday (1970), who presented followup data for six children diagnosed as learning disabled and treated with operant procedures to eliminate undesirable behavior and develop appropriate classroom behavior. The authors reported that the effects of treatment were maintained by all children at a 12 month followup observation based on behavioral observations and teacher interviews. Moreover, those children who had been gradu-

ally moved from food to social reinforcers exhibited additional improvement in behavior beyond the changes in target behavior compared to children who had not been graduated to social reinforcement at the end of the treatment period.

Training across Persons and Settings

Another method of enhancing transfer is to train behavior across persons and settings. When the environmental variables that control behavior become broader, the chances of transfer are increased. This strategy has been implemented in educational programs as well as in research studies.

The Madison Public Schools Curriculum for the Severely Handicapped (Brown, Scheurman, Cartwright, & York, 1973) is one example of an educational program that intervenes in multiple settings to enhance generalization. For each concept taught, the teacher is required to assess whether the child can perform the task across different persons (e.g., teacher and parent), with alternate language cues (e.g., "sit down" and "be seated"), and in a number of settings (e.g., home and school). If the child does not successfully perform the task, programing is instituted across these three variables. The value of training in multiple settings is also implicit in many early childhood programs that emphasize home based components. The ameliorative curriculum used by Karnes (1973), for example, stresses the involvement of parents both in the classroom and at home to reinforce and supplement social, self help, and cognitive skills. Similarly, teachers enhance generalization by using a number of opportunities during the day to teach the same concept. For example, opportunities are arranged to teach cooperative behavior in group activities, at recess or dismissal, and during snack, art, or cleanup time.

A number of studies document the effectiveness of training across settings and persons in enhancing transfer of training (Goocher & Ebner, 1968; Wahler 1969). Wahler (1969) reported that training at home and at school was necessary to decrease the frequency of disruptive behavior in the two settings. Issacs, Thomas, and Goldiamond (1960) trained a mute psychotic patient to speak; however, speech was limited to conversation with the therapist who had previously administered reinforcement. To develop generalization of the patient's verbal behavior, the researchers included a nurse in the speech training sessions. Eventually, the patient communicated with the nurse as well. Similarly, self destructive behavior of severely retarded children punished by one investigator (Lovaas & Simmons, 1969) decreased in his presence but continued at high levels in the presence of others until they also implemented the punishment intervention. These results suggest that teachers should provide training across persons and settings if they wish to ensure transfer of training.

Reinforcing Incompatible Behavior

Another method of facilitating transfer of training is to reward incompatible behavior; that is, any behavior that is physically impossible to emit at the same time as another behavior. The strategy usually evolved is to train and reward an appropriate but incompatible behavior (e.g., completing assignments), which will make it possible to decrease the frequency of an undesired response (e.g., leaving one's seat). Ayllon and Roberts (1974), for example, found that disruptive classroom behaviors decreased as a function of reinforcing completed academic assignments alone. Other authors have also reported decreases in disruptive behaviors as a result of rewarding appropriate behaviors (Burchard & Tyler, 1965; Marholin, McInnis, & Heads, 1974; Winet & Roach, 1973; Winkler, 1970).

These studies suggest that rewarding incompatible behavior can lead to decreases in undesirable behavior and thus enhance transfer by increasing the number of social settings in which the child will be accepted. It is likely, however, that reinforcing incompatible behavior would need to be used in conjunction with other techniques in order to ensure transfer.

Teaching Behaviors and Skills Likely to be Rewarded and to Lead to the Development of Other Appropriate Responses

The literature on generalization suggests that the kind of behavior or skill that is taught may alter the probability of transfer. Not only are certain behaviors more likely to be reinforced, but they may well lead to the development of other appropriate responses (Altman, 1971; Ayllon & Azrin, 1968).

Ayllon and Azrin (1968), for example, suggested that the teacher select behaviors likely to be rewarded by others, such as grooming, eating, and social and conversational skills. While these behaviors in and of themselves may not be sufficient to ensure reinforcement from the natural environment, they will, in combination with other techniques, increase the probability of transfer.

Baer and Wolf (1970) proposed the "behavioral trap." They suggested that training certain appropriate behaviors will facilitate further behavioral development not specifically trained, because factors in the natural environment are then more likely to take over. For example, the preschool child's peer group will teach the child a variety of skills, including new words, sharing, and other social skills. The preschool teacher might conceivably teach the child all of these skills, but it would be far more efficient to teach the child how to interact with peers (the behavior trap) and then allow the peers to teach the child the other skills.

Studies that support Baer and Wolf's observation include one by Harris, Johnston, Kelley, and Wolf (1964), in which teachers extinguished the crawling behavior of a preschool girl, which then allowed her to interact with the group in outdoor games. Subsequent

social interactions were shaped by the peer group. Similarly, Allen, Hart, Buell, Harris, and Wolf (1964) reinforced a young girl for being within three feet of another child. Within 6 days she was observed in interactions not previously observed. Buell, Stoddard, Harris, and Baer (1968) differentially reinforced a 3 year old girl, who was socially isolated from her peers, for increased outdoor play. Collateral development of appropriate social interactions such as touching, verbalizing, and playing with her peers then emerged.

The evidence from these studies suggests that acquiring certain skills and behaviors can be a critical variable in enhancing transfer of training and in acquiring other appropriate behavior. The snowball effect implicit in these studies is a bonus that should not be overlooked by the classroom teacher.

Schedules of Reinforcement

Another technique in encouraging transfer of training is to devise a reinforcement schedule. Such a schedule merely denotes the number of responses to be emitted or the amount of time to pass before a reward or a reinforcement is given. Since in almost all natural settings behavior is reinforced infrequently, researchers contend that one way to enhance generalization is to reinforce behavior through frequent rewards which are gradually withdrawn until a more intermittent schedule of reinforcement is effective.

Kazdin and Polster (1973) compared the effects of continuous and intermittent reinforcement in a token economy system for maintaining social interaction between two retarded subjects. Initially, a continuous schedule of reinforcement was used to establish a high frequency of social interaction. In the first phase of the study, withdrawal of reinforcement led to extinction of the responses. In the second phase of the study, one subject was continuously reinforced, and the other was continuously reinforced and then gradually placed on an intermittent schedule. When reinforcement was again discontinued the first subject quickly extinguished the target behavior, but the second subject continued to emit the behavior through a 5 day followup period.

Kale, Kaye, Whelan, and Hopkins (1968) trained three schizophrenic patients to greet staff on the ward of an institution. Greeting a staff member (e.g., saying "hi") was rewarded with cigarettes and social praise. After the greeting response was established at a high rate using continuous reinforcement, the schedule of reinforcement was gradually reduced until the subjects were required to emit 20 responses before being rewarded. After reinforcement had been delivered intermittently for a few weeks, reinforcement was withdrawn completely. A followup conducted 3 months after treatment showed that greeting responses were maintained at the high level developed during treatment.

Other studies employing a systematic thinning of reinforcement

include Hingsten and Trost (1966); Kazdin (1973); and Phillips, Phillips, Fixsen, and Wolf (1971).

Delay of Reinforcement

In the natural environment many rewards for behavior are delayed. Graduate students, for example, do not receive their reward until they have completed years of study. Similarly, parents and teachers frequently delay rewards for minutes, days, and even months. With many exceptional children, however, behavior must be immediately rewarded if it is to be maintained. Thus, an effective technique to enhance transfer with exceptional children is to increase gradually the time between performance of a behavior and its reinforcement.

The effectiveness of delayed reinforcement as a technique to enhance generalization has not been widely studied (Kazdin, 1975), and most research has been conducted in token economy classrooms relying on two major types of delay. In the first, the subject receives tokens as soon as the behavior occurs, but gradually the time between behavior and delivery of tokens is increased. Eventually, the delivery of tokens is delayed as much as a week after the desired response (Nay & Legum, 1975). The second technique involves a delay between token delivery and the exchange of tokens for backup reinforcers. In one study (Cotler, Applegate, King, & Kristal, 1972) a delay between token acquisition and exchange was progressively extended to 4 days with little decline in reinforced behaviors.

Techniques for Self Control

A final approach to enhancing transfer of learning is to provide the child with techniques for self management. Self management programs involve training children or adults to identify, record, and *consequate* their own behavior. Proponents of self management argue that teaching individuals to control their own behavior prepares them to adapt to new environments. Since the teacher cannot possibly anticipate all situations the child will encounter, self management is a potentially powerful means of ensuring transfer of learning. The logic of this argument is convincing, since self controlled behavior should be maintained and should transfer because the source of behavioral control is the individual rather than an external agent associated with one situation.

Self instruction training has been shown to lead to changes that are maintained once training is terminated. Meichenbaum and Cameron (1973) trained impulsive children to administer instructions to themselves to perform various tasks methodically. The results of the study showed that the training program was effective in improving their work and that gains made during training were maintained at a 1 month followup.

Several applied studies have compared self imposed contingencies with reinforcement delivered by some external agent (Felixbrod

& O'Leary, 1973; Johnson & Martin, 1972; Lovitt & Curtiss, 1969). Most comparisons reveal self imposed reinforcement to be equal to or slightly superior to externally delivered reinforcement (Marholin, Siegel, & Phillips, 1975).

Another self management technique involves the use of verbal self commands. For example, Palkes, Stewart, and Kahana (1968) successfully taught children diagnosed as hyperactive to inhibit undesirable behavior by repeating commands to go slower when performing a task. Others who reported successful use of verbal self instruction to change behavior include Bem (1967); Giebink, Stover, and Fahi (1968); Meichenbaum and Goodman (1971); and O'Leary (1968).

A major drawback to the use of self management techniques by teachers of young handicapped children is that these procedures have not been thoroughly researched, especially with young children. The youngest subjects involved in a self management study are found in Glynn, Thomas, and Shee (1973), who used self management techniques with second grade children in an attempt to develop and maintain appropriate social interactions. The children assessed their own behavior to determine if they had met the criterion number of interactions, recorded their behavior, and selected a reinforcer or reward. Followup at 5 and 7 weeks indicated that the procedure was extremely successful in maintaining target behaviors. Research using self control techniques specially designed for preschoolers and assessing the effects on transfer of learning seems to be a profitable direction for further research.

DIRECTIONS FOR PRACTICAL PROGRAMING

1. Perhaps the single most important implication concerning transfer of training is that where handicapped children are concerned teachers cannot merely assume that transfer will occur. *It must be programmed.*
2. Teachers should realize that they are potentially strong agents in promoting transfer of training. Many times their mere presence cues the child to display a certain skill or behavior.
3. Teachers should understand that using a variety of language cues in teaching a skill can effectively promote transfer. At first, the same instructions may be necessary to teach the skill; however, when the child has learned to respond to these instructions, a new but similar set of instructions can be used. It is important to remember that in the natural environment people ask us to do things in a number of different ways. Along the same line, teachers should also reward the child in a number of verbal ways. The handicapped child must learn that "good," "excellent," and "terrific" are all indicators of acceptable performance.
4. Teachers should recognize that using a variety of instructional materials enhances the possibility that the child will generalize

the concept being taught. For example, not all three sided objects look alike, and most people learn to recognize shapes only after they have seen them in a number of different contexts. Where the handicapped child is concerned, however, teachers cannot trust to the natural environment and must carefully program for generalization with a variety of instructional materials and settings.

5. Teachers of young handicapped children should become proficient in using some of the techniques developed by behavior modification specialists to ensure transfer of training. Familiarity with these techniques might well be developed through inservice training programs. Further, teachers should recognize that the procedures to enhance transfer reviewed in this section are not mutually exclusive. Rather, several techniques can be used simultaneously to promote transfer.
6. A deliberate effort should be made to evaluate the carryover of learning from one situation to another to determine future programing to ensure transfer of training.
7. Parents and teachers should recognize that one way a handicapped child may display unusual talent is in his or her ability to easily generalize knowledge on abilities learned in one situation to other similar settings.
8. It would appear that transfer of training would also be enhanced if the child were provided with feedback regarding success in using skills learned from one situation in another situation.
9. Teachers should recognize that the parents and the home environment play a key role in fostering transfer of training. Not only does the home provide another environment in which skills can be taught (a procedure useful in enhancing transfer), but parents are with their child in a number of settings and therefore have the opportunity to reward appropriate behaviors across settings. Further, transfer of training between school and home is best brought about when teachers and parents mutually define goals for the child and then program to reach these goals together.

REFERENCES

Allen, K. E., Hart, B. M., Buell, J. S., Harris, F. R., & Wolf, M. M. Effects of social reinforcement on isolate behavior of a nursery school child. *Child Development*, 1964, 35, 511-518.

Altman, K. Effects of cooperative response acquisition on social behavior during free play. *Journal of Experimental Child Psychology*, 1971, 12, 387-395.

Ayllon, T., & Azrin, N. H. *The token economy: A motivational system for therapy and rehabilitation*. New York: Appleton-Century-Crofts, 1968.

Ayllon, T., & Roberts, M. D. Eliminating discipline problems by strengthening academic performance. *Journal of Applied Behavior Analysis*, 1974, 7, 71-76.

Baer, D. M., Wolf, M. M., & Risley, T. Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis*, 1968, 1, 91-97.

Baer, D. M., & Wolf, M. M. The entry into natural communities of reinforcement. In R. Ulrich, T. Stachnik, & J. Mabry (Eds.), *Control of human behavior* (Vol. 2). Glenview IL: Scott, Foresman, 1970.

Bem, S. L. Verbal self-control: The establishment of effective self-instruction. *Journal of Experimental Psychology*, 1967, *74*, 485-491.

Bennet, P. S., & Maley, R. F. Modification of interactive behaviors in chronic mental patients. *Journal of Applied Behavior Analysis*, 1973, *6*, 609-620.

Berkowitz, S., Sherry, P. J., & Davis, B. A. Teaching self-feeding skills to profound retardates using reinforcement and fading procedures. *Behavior Therapy*, 1971, *2*, 62-67.

Brown, L., Scheurman, N., Cartwright, S., & York, B. *The design and implementation of an empirically based instructional program for severely handicapped students: Toward the rejection of the exclusion principle* (Book 3). Madison WI: Madison Public Schools, 1973.

Buell, J., Stoddard, P., Harris, F., & Baer, D. M. Collateral social development accompanying reinforcement of outdoor play in a preschool child. *Journal of Applied Behavior Analysis*, 1968, *1*, 167-173.

Burchard, J. D., & Tyler, V. O. The modification of delinquent behavior through operant conditioning. *Behavior Research and Therapy*, 1965, *2*, 245-250.

Bushell, D., Wrobel, P. A., & Michaelis, M. L. Applying group contingencies to the classroom study behavior of preschool children. *Journal of Applied Behavior Analysis*, 1968, *1*, 55-61.

Cotler, S. B., Applegate, G., King, L. W., & Kristal, S. Establishing a token economy program in a state hospital classroom: A lesson in training student and teacher. *Behavior Therapy*, 1972, *3*, 209-222.

Felixbrod, J. J., & O'Leary, K. D. Effects of reinforcement on children's academic behavior as a function of self-determined and externally imposed contingencies. *Journal of Applied Behavior Analysis*, 1973, *6*, 241-260.

Giebink, J. W., Stover, D. O., & Fahl, M. A. Teaching adaptive responses to frustration to emotionally disturbed boys. *Journal of Consulting and Clinical Psychology*, 1968, *32*, 366-368.

Goocher, B. E., & Ebner, M. *A behavior modification approach utilizing sequential response targets in multiple settings*. Paper presented at a meeting of the Midwestern Psychological Association, Chicago, May 1968.

Glynn, E. L., Thomas, J. D., & Shee, S. M. Behavioral self-control of an on-task behavior in an elementary classroom. *Journal of Applied Behavior Analysis*, 1973, *6*, 105-113.

Harris, F. R., Johnston, M. K., Kelley, C. S., & Wolf, M. M. Effects of positive social reinforcement on regressed crawling of a nursery school child. *Journal of Educational Psychology*. 1964, *55*, 35-41.

Hingsten, J. N., & Trost, F. C. Shaping cooperative responses in early childhood schizophrenics. In R. Ulrich, T. Stachnik, & J. Mabry (Eds.), *Control of human behavior from cure to prevention* (Vol. 2). Glenview IL: Scott, Foresman, 1966.

Issacs, W., Thomas, J., & Goldiamond, I. Application of operant conditioning to reinstate verbal behavior in psychotics. *Journal of Speech and Hearing Disorders*, 1960, *28*, 8-12.

Johnson, S., Bolstad, P., & Lobitz, L. *Generalization and contrast phenomena in behavior modification with children*. Paper presented at the Sixth Annual Baniff International Conference on Behavior Modification, March-April 1974.

Johnson, S. M., & Martin, S. Developing self-evaluation as a conditioned reinforcer. In B. Ashem & E. G. Poser (Eds.), *Behavior modification with children*. New York: Pergamon, 1972.

Kale, R. J., Kaye, J. H., Whelan, P. A., & Hopkins, B. L. The effects of reinforcement on the modification, maintenance, and generalization of social responses of mental patients. *Journal of Applied Behavior Analysis*, 1968, 1, 307-314.

Karnes, M. B. Evaluation and implications of research with young handicapped and low-income children. In J. C. Stanley (Ed.), *Compensatory education for children, ages 2 to 8*. Baltimore: The John Hopkins University Press, 1973.

Kazdin, A. E. Role of instructions and reinforcement in behavior changes in token reinforcement programs. *Journal of Educational Psychology*, 1973, 64, 63-71.

Kazdin, A. E. *Behavior modification in applied settings*. Homewood IL: Dorsey Press, 1975.

Kazdin, A. E., & Klock, J. The effect of non-verbal teacher approval on student attentive behavior. *Journal of Applied Behavior Analysis*, 1973, 6, 643-654.

Kazdin, A. E., & Polster, R. Intermittent token reinforcement and response maintenance in extinction. *Behavior Therapy*, 1973, 4, 386-391.

Kifer, R. E., Lewis, M. A., Green, D. R., & Phillips, E. L. Training predelinquent youths and their parents to negotiate conflict situations. *Journal of Applied Behavior Analysis*, 1974, 7, 357-364.

Lavigueur, H., Peterson, R. F., Sheese, J. G., & Peterson, L. W. Behavioral treatment in the home: Effects of an untreated sibling and long term follow-up. *Behavior Therapy*, 1973, 4, 431-441.

Loeke, B. Verbal conditioning with retarded subjects: Establishment or reinstatement of effective reinforcing consequences. *American Journal of Mental Deficiency*, 1969, 73, 621-626.

Lovaas, O. I., Freitag, G., Kinder, M. I., Rubenstein, B., & Simmons, J. W. Establishment of social reinforcers in schizophrenic children using food. *Journal of Experimental Child Psychology*, 1966, 4, 109-125.

Lovaas, O. I., & Simmons, J. Q. Manipulation of self-destruction in three retarded children. *Journal of Applied Behavior Analysis*, 1969, 2, 143-157.

Lovitt, T. C., & Curtiss, K. A. Academic response rate as a function of teacher and self-imposed contingencies. *Journal of Applied Behavior Analysis*, 1969, 2, 49-53.

Marholin, D., McInnis, E. T., & Heads, T. B. Effects of two free-time reinforcement procedures in a class of behavior problem children. *Journal of Educational Psychology*, 1974, 66, 872-879.

Marholin, D., Siegel, L., & Phillips, D. *Treatment and transfer: A search for empirical procedures*. Paper submitted to *Psychological Bulletin*, April 1975.

Meichenbaum, D. H., Bowers, K., & Ross, R. R. Modification of classroom behavior of institutionalized female adolescent offenders. *Behavior Research and Therapy*, 1968, 6, 343-353.

Meichenbaum, D. H., & Cameron, R. Training schizophrenics to talk to themselves: A means of developing attentional controls. *Behavior Therapy*, 1973, 4, 515-534.

Meichenbaum, D. H., & Goodman, J. Training impulsive children to talk to

themselves: A means of developing self-control. *Journal of Abnormal Psychology*, 1971, *77*, 115-126.

Nay, W. R., & Legum, L. Increasing generalization in a token program for adolescent retardates. *Behavior Therapy*, 1975.

Nolan, J. D., Mattis, P. R., & Holliday, R. C. Long-term effects of behavior therapy: A 12-month follow-up. *Journal of Abnormal Psychology*, 1970, *76*, 88-92.

O'Leary, K. D. The effects of self-instruction on immoral behavior. *Journal of Experimental Child Psychology*, 1968, *6*, 297-301.

O'Leary, K. D., Becker, W. C., Evans, M. B., & Saudargas, R. A. A token reinforcement program in a public school: A replication and systematic analysis. *Journal of Applied Behavior Analysis*, 1969, *2*, 3-13.

Palkes, H., Stewart, M., & Kahana, B. Porteus maze performance of hyperactive boys after training in self-directed commands. *Child Development*, 1968, *39*, 817-826.

Phillips, E. L., Phillips, E. A., Fixsen, D. L., & Wolf, M. M. Achievement place: Modification of the behaviors of pre-delinquent boys within a token economy. *Journal of Applied Behavior Analysis*, 1971, *4*, 45-49.

Quay, H. C., & Hunt, W. A. Psychopathy, neuroticism, and verbal conditioning: A replication and extension. *Journal of Consulting Psychology*, 1965, *29*, 283.

Redd, W. H., & Birnbrauer, J. S. Adults as discriminative stimuli for different reinforcement contingencies with retarded children. *Journal of Experimental Child Psychology*, 1969, *7*, 440-447.

Reisinger, J. J. The treatment of anxiety-depression via positive reinforcement and response cost. *Journal of Applied Behavior Analysis*, 1972, *5*, 125-130.

Rincover, A., & Koegel, R. L. Setting generality and stimulus control in autistic children. *Journal of Applied Behavior Analysis*, 1975, *3*, 235-246.

Risley, T. R. The effects and side effects of punishing the autistic behaviors of a deviant child. *Journal of Applied Behavior Analysis*, 1968, *1*, 21-34.

Stokes, T., Baer, D. M., & Jackson, R. L. Programming the generalization of a greeting response in four retarded children. *Journal of Applied Behavior Analysis*, 1974, *7*, 599-610.

Stokes, T., & Baer, D. M. An implicit technology of generalization. *Journal of Applied Behavior Analysis*, in press.

Wahler, R. G. Setting generality: Some specific and general effects of child behavior therapy. *Journal of Applied Behavior Analysis*, 1969, *2*, 23246.

Walker, H. M., & Buckley, N. K. Programming generalization and maintenance of treatment effect across time and across settings. *Journal of Applied Behavior Analysis*, 1972, *5*, 209-224.

Winet, R. A., & Roach, E. M. The effects of reinforcing academic performance on social behavior. *Psychological Record*, 1973, *23*, 391-396.

Winkler, R. C. Management of chronic psychiatric patients by a token reinforcement system. *Journal of Applied Behavior Analysis*, 1970, 47-55.

Zeilberger, J., Sampen, S. E., & Sloane, H. N. Modification of a child's problem behaviors in the home with the mother as therapist. *Journal of Applied Behavior Analysis*, 1968, *1*, 47-53.

Summary

The purpose of this monograph has been to examine 10 components of an exemplary program for preschool children, including (a) identification (b) parent involvement (c) mainstreaming the handicapped child, (d) teacher behavior, (e) promoting a positive self concept, (f) ongoing assessment, (g) individualization of instruction, (h) emphasis on language, (i) the role of the paraprofessional, and (j) promoting generalization. The authors' general intent has been to familiarize the teacher, administrator, and program developer with some basic research studies and educational concepts associated with each component and to provide directions for implementing the components as part of an ongoing preschool program.

The 10 components selected for review were judged by the authors as being the most important to the teacher, especially in the initial implementation of a program for preschool children. Similarly, the studies, concepts, and directions for programing included here were designed to aid in the implementation of an effective program. At the same time, however, it is important to emphasize that the components, studies, concepts, and program directions are by no means exhaustive. In fact, for each of the 10 components there was literally a mountain of research on a variety of issues potentially useful to the classroom teacher. However, it was beyond the scope of this monograph to review all studies in detail or to examine every issue or concept. It was only possible to scratch the surface and provide the most important information.

OTHER IMPORTANT COMPONENTS

As mentioned in the introduction to the monograph, the senior author, in her reviews of preschool programs, has identified a number of other components considered important in any effort to educate

young children—handicapped and nonhandicapped alike. These components may be grouped into three general areas: (a) administrative responsibilities, (b) classroom programing procedures, and (c) program evaluation. The components in each area will be briefly reviewed.

Administrative Responsibilities

Under administrative responsibilities, it is most important to recognize that principals, superintendents, and program supervisors play a critical role in determining the success or failure of a preschool program. These administrators must demonstrate by word and deed a stong supportive and leadership role in the professional development of the staff and the overall development of the program. Administrative supports for the staff include effectively organizing and implementing preservice and inservice training sessions; organizing effective systems for communication between staff members; developing an effective feedback system to all members of the staff; and defining the job responsibilities of each member of the interdisciplinary, ancillary staff. Among the important supports provided by administrators to the overall development of the program are the selection of a model for structuring the overall educational framework for the program, determining whether the physical facilities used for the program are compatible with the program goals, and the choice of the most effective system for instructional service delivery.

Classroom Programing Procedures

Although the components reviewed in this monograph are relevant to the teacher in making programing decisions in the classroom, other additional components bear mentioning. Successful preschool programs require that teachers make flexible use of their instructional time. For example, initial work with a child may require heavy investments of time to develop social or self help skills. Later, staff time may need to be redirected toward other objectives. The acquisition of techniques for selecting instructional materials relevant to the population being served is still another important component. Although language development was emphasized in this monograph as an important area of curriculum programing, teachers must remember to attend to the total development of the child including an emphasis on the motor and social development of the child. Finally, it behooves teachers to include techniques for ensuring a comprehensive and efficient record keeping system as an important component in the programs. Frequently, handicapped children manifest complex problems that require the careful collection, recording, and efficient storage of data on the child so that both gross and subtle interactions that interfere with the child's learning can be identified and consistently monitored.

Program Evaluation

A final component of an exemplary preschool program that requires further consideration is an ongoing evaluation of the program. In recent years, traditional techniques for evaluating programs, such as the use of pre-and post-standardized-test results, have come under attack. Other techniques for judging the success of a program need to be applied. These include the ability of the program to meet the developmental needs of each child; the ability of the program to integrate handicapped and nonhandicapped children successfully and to establish the nature of the benefits received by handicapped children as a result of their involvement with children at different developmental levels; the satisfaction of parents with the program's ability to meet their child's needs; the children's later school adjustment; and the immediate and long term change in attitudes of parents and teachers toward handicapped children. Currently, research is being conducted in developing effective evaluation measures in each of these areas.